DOCUMENT RESUME

ED 318 153 EC 230 555

AUTHOR Schnetter, Vicki A., Ed.
TITLE Manual for Special Education Nurses.
INSTITUTION Iowa State Dept. of Education, Des Moines. Div. of Instructional Services.
PUB DATE 86
NOTE 249p.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC10 Plus Postage.
DESCRIPTORS Child Abuse; Clinical Diagnosis; Communicable Diseases; *Disabilities; Elementary Secondary Education; Immunization Programs; *Physical Health; *School Health Services; *School Nurses; Screening Tests; Special Education; *Staff Role
IDENTIFIERS Iowa

ABSTRACT

This manual aims (1) to provide a standard, well-referenced resource for Iowa special education nurses and (2) to provide direction and continuity for health services to pupils with special needs. The first chapter provides an overview of the special education nurse's role, including philosophy, definitions of assignments, levels of service, and nurse's sample monthly reports on pupils. Subsequent chapters cover immunizations; handicapping conditions; high incidence health problems such as constipation, dehydration, colds, and otitis media; screening and health assessment; specialized physical health care such as emergency care, postural drainage, intermittent catheterization, and tube feeding; medications; control of communicable diseases; and child abuse. Lists of resource organizations, audiovisual materials, and over 100 references are included. (PB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

EC

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED318153

Manual for Special Education Nurses

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Mary Jo Bruett

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EC 230555

Iowa Department of Education

BEST COPY AVAILABLE

3361-F24034-8/86

State of Iowa
DEPARTMENT OF EDUCATION
Bureau of Special Education
Grimes State Office Building
Des Moines, Iowa 50319-0146

STATE BOARD OF EDUCATION

Lucas DeKoster President. Hull
Dianne L.D. Paca. Vice President. Garner
Betty L. Dexter Davenport
Thomas M Glenn. Des Moines
Karen K. Goodenow. Wall Lake
Francis N. Kenkel. Defiance
John Moats, Council Bluffs
Mary E. Robinson. Cedar Rapids
Harlan W. Van Gerpen, Cedar Falls

ADMINISTRATION

Robert D. Benton, Director and Executive Officer of the State Board of Education
Mavis Kelley. Administrative Assistant
James E. Mitchell. Deputy Director

Instructional Services Division

Carol McDanolds Bradley, Administrator
J. Frank Vance, Chief, Bureau of Special Education
Vicki A. Schnetter. Consultant, School Health Services

282-1780

MANUAL

FOR

SPECIAL EDUCATION

NURSES

This manual is dedicated to Fay S. Cleary R.N., M.S.N., School Nurse Consultant in the Iowa Department of Public Instruction from 1967 to 1984, who developed the role of the Special Education Nurse in Iowa with dedication and expertise. Her unique skills and personal commitment to identifying health needs of pupils and recognizing the significance of the health component in the educational process made her invaluable in her role of consultant to the Special Education Nurses of Iowa. We will always be grateful to her, both personally and professionally.

ACKNOWLEDGEMENTS

The Special Education Nurse Task Force wishes to thank the Iowa State Department of Education which provided the support for this project.

We would also like to express our gratitude to the Special Education Directors for allowing us to participate on the Task Force.

Particular thanks go to the Special Education Nurses throughout the State of Iowa for their significant contributions of time, materials, and expertise in the planning and implementation of this project.

Most of all we would like to acknowledge the pupils and families who have inspired this project. We hope that because of this project their health needs and the health needs of future pupils will be better served in the educational setting.

Ellen L. Johnson, B.S.N., A.R.N.P., C.S.N.P., AEA 4
Marilyn Kinne, B.S.N., M.A., A.R.N.P., C.S.N.P., AEA 7
Sondra Price, B.S.N., R.N., AEA 5
Jean Wilder, B.S.N., A.R.N.P., C.S.N.P., AEA 10 (Retired)

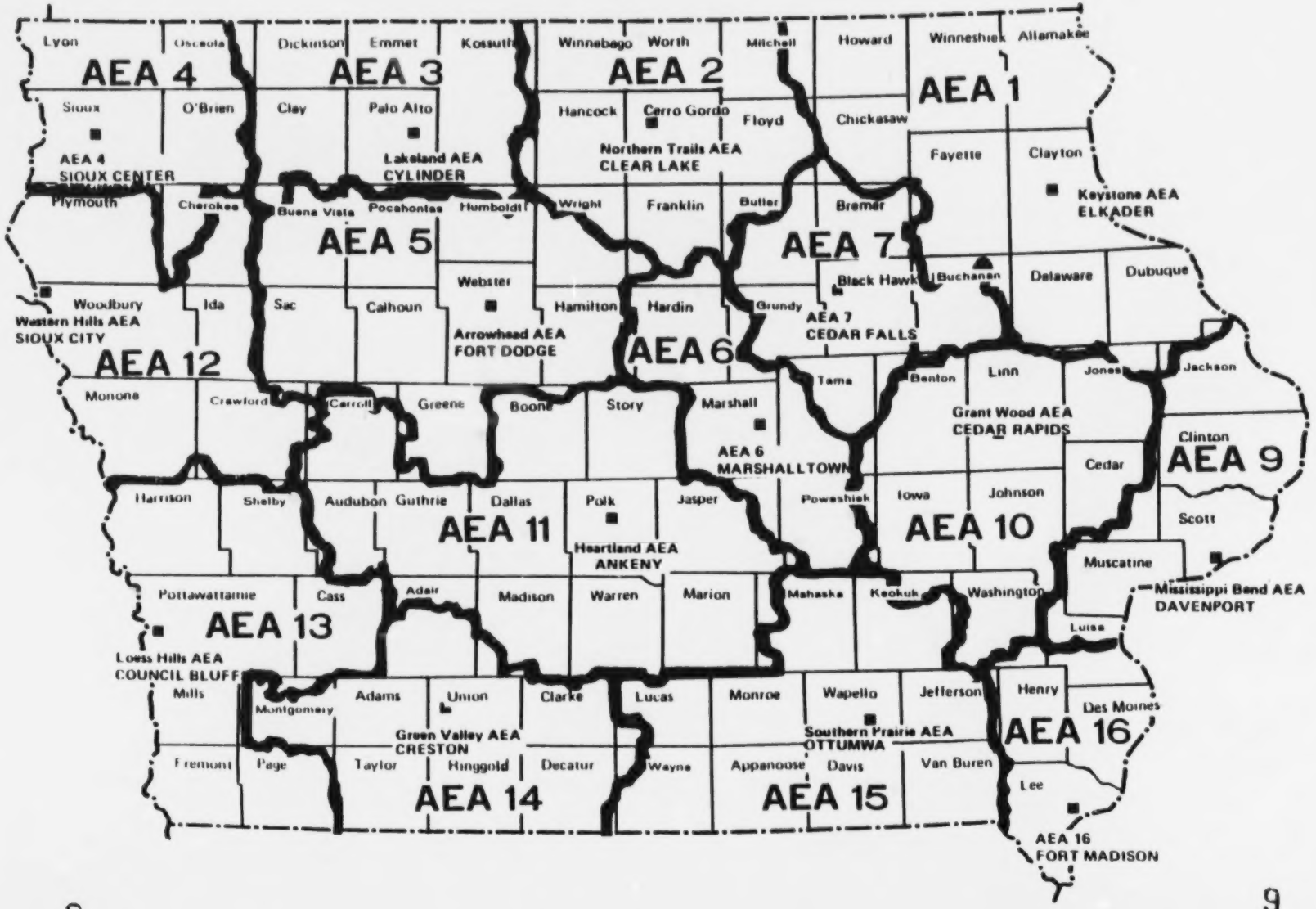
FOREWORD

The purpose of this manual is to provide a standard, well-referenced resource for the Special Education Nurse and provide direction and continuity for health services to pupils with special needs.

GOALS

1. To standardize the practice of Special Education Nurses in the State of Iowa.
2. To acquaint the Special Education Nurse with the impact of handicapping conditions on the educational process and facilitate the orientation of new Special Education Nurses.
3. To serve as a resource for ongoing professional growth.
4. To provide information to support administrative decisions on official policies and on issues relating to school health.
5. To support the significance of the Special Education Nurse as a member of the multidisciplinary team in making realistic decisions about programming and health management to meet the requirements of P.L. 94-142 (Education for All Handicapped Children)

Area Education Agencies



INTRODUCTION

The Special Education Nurse has become an integral part of the educational system evolving in response to changes in that system. According to P.L. 94-142, Education for All Handicapped Children Act of 1975, all handicapped children are to have available to them "a free, appropriate, public education which includes special education and related services to meet their unique needs." In Iowa, services are provided to children between birth and the age of twenty-one (Rules of Special Education, 670—12.1).

The resulting expansion of programs has resulted in the need for health services to address the medical needs of the handicapped child. Children with special needs may have a variety of health related concerns ranging from simple to complex. Within the educational structure, the strengths and limits of the handicapped must be identified and interpreted to assist parents as well as the educational team in determining the impact of the health status on the child's educational program.

The Special Education Nurse provides nursing services to handicapped children, including identification of health needs, development of a plan of nursing services, implementation of activities, and evaluation of the outcomes in relation to predetermined goals. Being able to coordinate gathered information from parents, educators, and medical resources assures the Special Education Nurse a vital link in the educational process.

This manual is the result of many hours of work by four special education nurses. Throughout the process of its development, the editor has experienced a continuing appreciation of the professional competence demonstrated by the authors. The Bureau of Special Education of the Department of Education gratefully acknowledges those nurses who developed this manual. The material gathered in this manual will serve as a valuable resource for the Special Education Nurses in Iowa.

Vicki A. Schnetter, M.S., R.N.
Editor

TABLE OF CONTENTS

Acknowledgements i

Foreword ii

Area Education Agencies iii

Introduction iv

Table of Contents v

I. THE SPECIAL EDUCATION NURSE

Philosophy 2

Position Overview 3

Job Description 5

Competencies of Special Education Nurses 7

Definitions of Assignments. 8

Special Education Nurse Services 9

Directory 10

Levels of Service 12

Role of the Nurse 13

Sample Monthly Report 16

II. IMMUNIZATIONS

Iowa Code and New Recommendations 19

Pertussis Vaccine 20

III. HANDICAPPING CONDITIONS

Mental Disability 23

Physical Disabilities 25
Myelomeningocele 26
Cerebral Palsy 29
Asthma 33
Heart Disease 36
Sensory Impairments 37
Hearing 38
Vision 41
Genetic Disorders 52
Fetal Alcohol Syndrome 53
Prader Willi Syndrome 53
Fetal Rubella Syndrome 54
Down Syndrome 55
Cystic Fibrosis 59
Phenylketonuria (PKU) 60
Other Disorders of Development 61
Convulsive Disorders 62
Attention Deficit Disorders 75
Psychosocial Dwarfism 80
Nutritional Disorders 82

IV. HEALTH PROBLEMS

High Incidence Health Conditions 91
Constipation 92
Dehydration 94
Colds 96
Otitis Media 97

V. SCREENING AND HEALTH ASSESSMENT

Screening Programs 99

Height and Weight 100

Blood Pressure 101

Scoliosis 104

Health Assessment 105

Guide 107

School-Aged Children 110

Guidelines for Health Supervision 111

Tanner Stages 112

Abnormal Findings 113

Definitions 114

Sample Forms 115

VI. SPECIALIZED PHYSICAL HEALTH CARE

Emergency Situations 132

Anaphylactic Reaction 133

Dysreflexia Alert 134

Replacement of Tracheostomy Tube 136

Hypoglycemia Reaction (Insulin Shock) 138

Other Specialized Health Care Procedures 140

Postural Drainage 141

Intermittent Catheterization 145

Inserting Nasogatric Tube 147

Tube Feeding 149

Tracheostomy 152

Reducing Rectal Prolapse 161
Sample Forms 162

VII. MEDICATIONS

Medication in School. 165
Medication Administration 166
Administration of Over-The-Counter Medication 167
Administration of Rectal Valium 168
Sample Medication Policy 170
Sample Forms 171

VIII. COMMUNICABLE DISEASES

Control of Communicable Diseases 178
Herpes 179
CMV 186
AIDS/ARC 195
Body Fluids and Transmission 201

IX. CHILD ABUSE

Mandatory Reporting 206
Summary of Law 207
Making a Referral 208
Indicators of Maltreatment 210
Working With Children 211
Sample Forms 213

RESOURCES 216
REFERENCES 225

THE SPECIAL EDUCATION NURSE

PHILOSOPHY

Special Education Nurses believe:

1 The premise of Public Law 94-142 which assures the free, appropriate education for all handicapped pupils.

2. The health status of disabled children has a profound effect on development and learning.

3. Every pupil regardless of the presence of or the severity of a handicap is entitled to a level of health which permits optimum utilization of educational opportunities.

4. Health services should be consistent with the philosophy and objectives of the educational program.

5. The Special Education Nurse has a responsibility to continue professional growth and to understand the philosophy and strategies of other disciplines serving special education pupils.

6 The role of the Special Education Nurse is becoming increasingly valuable in the educational process as children who are medically fragile and dependent on more complex medical treatments are being served.

POSITION OVERVIEW

I. Rules for Teacher Education and Certification (TEC) of the Iowa Department of Education outline the following requirements for the Special Education Nurses:

670--73.3(14) Special Education Nurse

A. AUTHORIZATION

The holder of this authorization is legalized to serve as a Special Education Nurse to children requiring special education.

The legalization for this support service personnel is through a Statement of Professional Recognition (SPR) and not through a certificate.

B. PROGRAM REQUIREMENTS

Degree - Baccalaureate in Nursing or Master in Nursing.

C. OTHER

1. Current licensure in the State of Iowa by the Board of Nursing.

2. Two years experience in Public Health Nursing including service to schools or as a school nurse or 6 hours of Special Education courses.

Procedures for aquiring SPR from TEC Division

The Special Education Director of the Area Education Agency (AEA) must submit a letter to the division requesting that the SPR be issued. Additionally, these documents must be submitted:

1. A copy of the license issued from the Division of Licensure.

2. An official transcript.

3. Verification of C.2.

II. Rules of Special Education, Revised in 1985 include the following statement under Special Education Support Personnel.

670—12 25(3)m

"Special Education Nurse" is a professional registered nurse who assesses, identifies, and evaluates the health needs of handicapped pupils; interprets the health needs to the families and educational personnel as those needs relate to the pupils' strengths and educational limitations; implements specific activities commensurate with the practice of professional nursing and integrates the health care into an acceptable pattern with the educational program.

III. Job Description

The following job description was developed by the Special Education Nurses of Iowa as a reference for individual AEAs. Responsibilities may vary depending on the needs of the handicapped population within the AEA.

JOB DESCRIPTION

Special Education Nurse

The Special Education Nurse must be experienced in providing comprehensive nursing services to handicapped children and their families and must be knowledgeable in school organization. The Special Education Nurse also needs to be familiar with the organizational structure and services of community agencies.

Special Education programs and services are based on identified needs of handicapped children in each Area Education Agency (AEA); therefore. just as special education programs and services will vary among individual AEAs, so too will the Special Education Nurse's services. In each instance, the Special Education Nurse will be identifying nursing responsibilities. planning and implementing within the AEA specific activities which comprise the practice of professional nursing.

The following responsibilities are seen as within the scope of the Special Education Nurse services:

A. Develop an Individual Health Promotion Plan (IHPP)

1. Assessment of the health* status of special education pupils which may include but is not limited to:

   a. screening programs
   b. obtaining health histories and current health data
   c. physical assessment

2. Statement of nursing diagnosis: a precise statement describing the health status of the child

3. Establishing long- and short-term goals and objectives to meet those goals

4. Implementation of the IHPP objectives

   a. referral for professional services
   b. monitoring the medical regimen of the child
   c. parent and child counseling regarding health and nurturing needs
   d. nursing intervention in the educational program

5. Evaluation and follow through

   a. development of observational criteria and collecting data on the effectiveness of any and all portions of the plan
   b. reassessment of goals

B. Assist the child's family in identifying their individual health needs and environmental concerns and in exploring possible alternative solutions

1. Referral to appropriate professional and community resources

2. Wellness promotion

3. Supportive counseling

C. Work cooperatively with other personnel in special education programs and services to promote a coordinated child-centered approach to the problems of the handicapped child

1. Participation in educational diagnostic, evaluation, and placement staffings

2. Providing inservice for employees

3. Assisting in the development of health-related curriculum

4. Assisting school personnel in recognizing health and safety risks

D. Provide assistance to the Special Education Director and Administrators to further develop the health component of the AEA Special Education Support Staff

*HEALTH = A continuum from wellness to illness

COMPETENCIES
OF SPECIAL EDUCATION NURSES

The Special Education Nurse provides comprehensive professional health services to handicapped children within the framework of the educational system. The Special Education Nurse has:

1. The expertise to identify, assess and manage health needs of pupils from birth to 21 years of age.

2. The expertise to effectively follow up identified health problems, to provide health counseling to pupils and parents, and to motivate and help parents to obtain appropriate health care.

3. The ability to consult with educational administrators, instructional, and support staff in modifying the school regimen and environment to meet health needs of Special Education pupils.

4. The knowledge to deal effectively with and establish procedures for emergency injuries and illnesses of pupils individually or in the event of a disaster.

5. The ability to make valid referrals and coordinate public and private resources to help implement the health program for Special Education pupils.

6. The knowledge to assist in decisions for placement of the Special Education pupil in a regular classroom which will not jeopardize the safety and health status of the pupil.

7. The insight to identify health and safety hazards within the school which could endanger health or lives and reduce student ability to learn and staff ability to teach.

8. The ability to influence Average Daily Attendance by reducing the possibility of communicable disease and promoting high level wellness.

9. The educational background and experience to serve as a resource person to educational administrators and staff on matters of health management and wellness.

10. The expertise to obtain a comprehensive health and developmental history and an evaluation of the home environment as it relates to the health status of the pupil.

11. The expertise to interpret the relationship of health and environmental information for modification or adaptation of the pupil's educational program.

12. The expertise to serve on the multidisciplinary team to develop the Individual Education Plan and conduct periodic evaluations.

DEFINITIONS OF ASSIGNMENTS

Center-based Service

Center-based Special Education Nurses are assigned to one facility in the AEA area. The amount of nursing service in such a center depends on the health status of the pupils, the severity of the disabilities, and the number of children served in the center.

Itinerant or Area-wide Service

The Special Education Nurse may be assigned to provide nursing service to several programs within the boundaries of the AEA. This may also include nursing service to pupils in home-intervention programs. Sometimes compromises in the extent of nursing service must be made because of the number of pupils, the severity of handicaps, and geographical distance between programs.

Diagnostic Center Service - (Clinic)

Special Education Nurses may provide physical assessment and neurodevelopmental screening for pupils of all ages for diagnostic information to determine appropriate educational programming and the need for other support services or referrals.

SPECIAL EDUCATION NURSE SERVICE IN IOWA

AEA #	# of School Districts	# Nurses	Assignments
1	26	4	Center based (1) Clinic and area-wide (1) Area-wide (2)
2	28	0	
3	25	0	
4	19	2	Centers (1) Area-wide (1)
5	45	1 1/2	Area-wide (1) Area-wide (1/2)
6	21	2	Center based (1) Area wide (1)
7	26	2 1/2	Center based (1) Preschool area-wide (1) Area-wide (1/2)
9	24	1	Center based (1)
10	39	1	Centers S/PH* (1)
11	61	4	Center based - Des Moines (2) Preschool Des Moines (1) Center based (1)
12	28	1/2	Preschool-area wide (1/2)
13	33	0	
14	22	0	
15	26	0	
16	13	1	Preschool-center based (1)

*S/PH = Severely/Profoundly Handicapped

9/86

Charlotte J. Burt, Consultant
School Health Services
Iowa Department of Education
Bureau of Special Education
Grimes State Office Building
Des Moines, IA 50319-0146
515/281-3176

SPECIAL EDUCATION NURSES

Linda Marshall, S.E.N
Keystone AEA 1
Helen Keller School
2840 John F. Kennedy Road
Dubuque, IA 52001
319/588-8330

Mary Purdy, S.E.N.
Keystone AEA 1
1473 Central Avenue
Dubuque, IA 52001
319/588-0538

Marti Schmitz, S.E.N.
Keystone AEA 1
Route 2, Box 19
Elkader, IA 52043
319/245-1480

Linda Siegrist, S.E.N.
Keystone AEA 1
201 Sixth Street N.W.
Waukon, IA 52172
319/568-4818

Special Education Nurse
Northern Trails AEA 2
P.O. Box M
Clear Lake, IA 50428
515/357-6125

Ellen L. Johnson, S.E.N.
Area Education Agency 4
102 South Main Avenue
Sioux Center, IA 51250
712/722-4374

Sandi Moeller, S.E.N.
River Valley School
AEA 4
Rock Valley, IA 51247
712/476-2743

Kaye Grossnickle, S.E.N.
Arrowhead AEA 5
1235 Fifth Avenue South
P.O. Box 1399
Fort Dodge, IA 50501
515/955-8763

Sondra K. Price, S.E.N.
Arrowhead AEA 5
1235 Fifth Avenue South
P.O. Box 1399
Fort Dodge, IA 50501
515.576-7434

Kathy M. Deibert, S.E.N.
Area Education Agency 6
210 South 12th Avenue
Marshalltown, IA 50158
515/752-1578

Linda L. Topp, S.E.N.
Area Education Agency 6
Pleasant Hill School
909 South 12th Street
515/753-3796

Cyd Q. Grafft, S.E.N.
Area Education Agency 7
3706 Cedar Heights Drive
319/273-8250

Marilyn Kinne, S.E.N.
Area Education Agency 7
River Hills School
2700 Grand Boulevard
Cedar Falls, IA 50613
319/268-0487

Ruby I. McCullough, S.E.N.
Area Education Agency 9
Harry S. Truman School
5506 North Pine Street
Davenport, IA 52806
319/386-6450

Rosemary Berckes, S.E.N.
Area Education Agency 10
Taylor Elementary
720 Seventh Avenue S.W.
Cedar Rapids, IA 52404
(319)398-2477

Nancy Paulson, S.E.N
Grant Wood AEA 10
4401 Sixth Street S.W.
Cedar Rapids, IA 52245
319/399-6700

Mary Simmons, S.E.N.
Monroe Development Center
Area Education Agency 10
3200 Pioneer Avenue
Cedar Rapids, IA 52403

Joyce Burch, S.E.N.
Area Education Agency 11
Smouse School
2820 Center
Des Moines, IA 50312
515/277-6311

Marilyn L. Goll, S.E.N.
Area Education Agency 11
Willson-Beardshear School
920 Carroll Avenue
Ames, IA 50010
515/292-1543

Dotty Solliday, S.E.N.
Area Education Agency 11
Ruby Van Meter School
710 28th Avenue
Des Moines, IA 50312
515/274-3873

Barbara Wright, S.E.N.
Area Education Agency 11
Smouse School
Preschool Handicapped
2820 Center
Des Moines, IA 50312
515/277-6238

Lynette Kelsey, S.E.N.
Western Hills AEA 12
1520 Morningside Avenue
Sioux City, IA 51106
712/274-6010

Susan Flemr, S.E.N.
Western Hills AEA 12
1520 Morningside Avenue
Sioux CIty, Ia 51106
712/274-6050

Patrice Bennett, S.E.N.
Lucas County AEA Office
118 North Grand
Chariton, IA 50049
515/774-8212

Sharon Ferguson, S.E.N.
Mahaska County AEA Office
410 South 11th Street
Oskaloosa, IA 52577
515/672-2546

Lesle Kouba, S.E.N.
Area Education Agency 15
Preschool Annex
105 East Locust
Bloomfield, IA 52537
515/664-3488

LEVELS OF SERVICE

Many handicapped pupils have health and/or physical problems which interfere with their functional abilities. It is the role of the Special Education Nurse to provide professional nursing service to meet the special health care needs of these pupils so that they may reach their optimum health status and benefit from their educational program.

A. Levels of Direct Health Services to Special Education Pupils by the Special Education Nurse (SEN)

1. Level I

   Minimum of 60 minutes/week direct service to pupil and/or consulting with others (teachers, families, other professionals). Individual Health Promotion Plan (IHPP) and/or Individualized Education Program (IEP) written by SEN.

2. Level II

   Minimum of 30 minutes/week direct services to pupil and/or consulting with others. IHPP and/or IEP written by SEN.

3. Level III

   Minimum of 30 minutes direct or delegated services to pupil and/or consulting with others every one to four weeks. IHPP and/or IEP written by SEN (SEN will monitor delegated responsibilities).

4. Level IV

   Minimum pupil contact and/or consulting with others every three months. IHPP and/or IEP written by SEN (optional).

5. Level V

   Minimum pupil contact and/or consulting with others yearly IHPP and/or IEP written by SEN (optional).

ROLE OF THE NURSE

P.L. 94-142, The Education for All Handicapped Children Act of 1975, provides for an Individualized Educational Program (IEP) to meet the educational needs of each handicapped pupil (Section 4. P.L. 94-142. This plan is to be written, collaboratively developed, and updated annually by appropriate school personnel. parents. pupil (when appropriate), and other persons the above or parents may invite. (The Special Education Nurse is referred to one of the references for IEP content.) In addition, the Iowa Rules of Special Education, 12.17(1)a.(1) includes health history as one of the components of a comprehensive educational evaluation prerequisite to placement of pupils in special education programs. Where school nurses are employed, it is considered essential they collect, organize, and interpret the health history.

I. Development of I.E.P.

The National Association of State School Nurse Consultants has suggested activities relating to IEP development and school nurses. These are:

1. To incorporate the health component into the total IEP.

2. To state the health needs of the pupil (including input from parent, child, and physician).

3. To establish goals to meet the health needs.

4. To establish short-term objectives for the pupil which are measurable and stated in behavioral terms.

5. To identify who can most appropriately deliver the services to meet the health needs and who will be responsible for payment of medically-related referrals (parent, agency. etc.).

6. To identify the date health services will start and how long they will be required.

7. To develop an evaluation process to determine to what extent the pupil's needs are being met.

Assessment of the health status may include (but is not limited to) screening program information, health history data, other current health data. physical assessment. The pupil's strengths, especially those which can help compensate for the pupil's limitations, should be noted.

The school nurse will exercise professional judgment regarding the need for expanded health evaluations or reports related to potential or identified health problems.

Whenever the predominate problem is health related, or a physical health problem exists, the school nurse should be present at the staffing and the IEP planning to present information and interpret the implications for the educational program of the child.

If no health problem exists, the nurse may provide a written report to the staffing committee.

If the nurse is not present at the initial staffing and IEP meeting, administrative procedures should be in place which will provide for communication to the nurse regarding the discussion and follow-up recommended.

In implementing the IEP, the Special Education Nurse may be involved in the following activities: management of the health care plan for the pupil in the school setting, interpretation of the pupil's medication & special treatments to school personnel, providing direct health care services, development of procedures and training of personnel to meet health needs, monitoring health care services provided by other school personnel. recommending modifications of the school program to meet the pupil's health needs, acting as a liaison between school. community health providers, parent, and pupil. and providing health consultation and education and health promotion to the pupil and family.

II. Annual Review

P.L. 94-142 also provides for an annual review and a three-year re-evaluation process. Activities for the school nurse suggested by the National Association of School Nurse Consultants are:

1. To review the health needs. goals, and objectives which were previously identified.

2. To document progress made in accomplishing the goals and objectives.

3. To obtain current pertinent health information including, but not limited to, vision and hearing.

4. To make recommendations necessary to identify current health needs.

5. To work with other multidisciplinary team members to set new goals and objectives to meet the pupil's present needs.

6. To revise the IEP to meet present needs.

7. To continue re-evaluations as needed.

Based on the results of the annual review of the child's health status, the Special Education Nurse may do the following:

1. If no change has occurred, the nurse may determine that the report may be given in writing to the review team.

2. If change has occurred, the school nurse shall exercise professional judgment regarding the change and indicate reasons for nursing input at the review meeting.

3. If nursing service is required by the pupil, the specific service should be a component of the IEP and the nurse should be present at the annual review.

4. If the nurse does not attend the review meeting, administrative procedures need to be in place which will communicate to the school nurse the outcome of the review and the follow-up recommended.

III. Three-year Re-evaluation

It is essential that a written update of the pupil's health be a component of the three-year re-evaluation.

If there is no health problem or health-related component in the IEP, the nurse will exercise professional judgment in relation to attending the evaluation meeting.

If the nurse does not attend the re-evaluation meeting, administrative procedures will provide for communication to the school nurse the results of the evaluation.

Resources

School nurses working with handicapped children (1980). ANA.

Children at Risk, part II (January. 1982). School Health Digest.

National Association of State School Nurse Consultants define role of school nurse, P.L. 94-142 - education for all handicapped children act of 1975 (1982). Journal of School Health.

Rules of Special Education (1985). State of Iowa Department of Public Instruction.

Wold. S. School nursing, a framework for practice (1981). 65-66, 203.

SAMPLE

SPECIAL EDUCATION NURSE MONTHLY REPORT

	0-3 Yr.	PRESCHOOL	SCHOOL AGE
SCREENING			
HEALTH HISTORIES COMPREHENSIVE: UPDATE:			
PHYSICAL ASSESSMENTS:			
STAFFINGS:			
TEAM CONFERENCES:			
REFERRALS: MEDICAL/HEALTH: OTHER:			
PARENT CONTACT/COUNSELING HOME: SCHOOL: TELEPHONE: WRITTEN:			
NURSING INTERVENTION MEDICATION FIRST AID NUTRITIONAL NEEDS: DENTAL HEALTH: COUNSELING: HEALTH EDUCATION:			

	0-3 Yr.	PRESCHOOL	SCHOOL AGE
CLASSROOM VISITS OBSERVATION: RESOURCE:			
CONSULTANT AEA: LEA: COMMUNITY:			
WORKSHOPS/INSERVICES ATTENDED: PRESENTED:			
REPORTS, SURVEYS. RECORDS:			
MILEAGE:			

OTHER:

Send to:
Consultant, School Health Services
Department of Education
Grimes State Office Building
Des Moines, IA 50319-0146

IMMUNIZATIONS

IMMUNIZATIONS

In 1976, the Iowa Legislature passed legislation which requires that any pupil attending elementary or secondary schools or licensed child care centers will have received immunizations as specified in the Code of Iowa (Section 139) and present proof of the immunizations at the time of enrollment. A copy of the updated rules is included in the School Nurse Manual.

There has been some question about the use of pertussis vaccine for children with neurological problems and other disabilities. To clarify the situation, Drs. Bell and Anderson of the medical staff at University of Iowa Hospitals. Division of Developmental Disabilities, have presented a position paper with recommendations which is included in this section. This statement will provide clarification for pupils who may have been on a medical exemption as allowed under Section 139 of the Code (470-7.3(1).

A recommendation has been made (August, 1985) by the American Academy of Pediatrics and supported by the Center for Disease Control in Atlanta. Georgia, for children to receive immunization against hemophilous influenza B. This vaccine is recommended for all children 24 months of age and older. It is also recommended for children who are in day care centers at 18 months of age. followed by a booster before age 3 years.

Pupils attending school who are residents of institutions or other residential facilities are at risk for developing Hepatitis B. The risk is consequent to bites and contact with skin lesions, saliva, and other infective secretions. This has implications for classmates of these pupils as well as school staff. A vaccine for Hepatitis B (HB) was licensed in November. 1981. and is available for pupils and staff at risk for contracting the disease. In addition, post exposure prophylaxis may be considered in consultation with a physician.

Other immunizations and tests for communicable diseases, although not required for school attendance, should be discussed with the child's physician.

USE OF PERTUSSIS VACCINE IN SPECIAL POPULATIONS

On February 15, 1985, the medical staff of the Division of Developmental Disabilities met with Drs. Bell and Anderson to discuss the appropriate use of pertussis vaccine in certain populations for which the Division is responsible. The following summarizes the points agreed upon:

Background:

1. The most serious complication associated with the administration of pertussis vaccine is an encephalitis which can leave the patient severely mentally and motorically impaired. The reaction typically occurs one to two weeks following administration of the pertussis vaccine.

2. In individuals predisposed to seizures pertussis vaccine can provoke their occurrence. In individuals not predisposed to seizures there has been an unproven suspicion that pertussis vaccine may in some way be associated with a single seizure or the onset of a seizure disorder.

3 There are additional minor complications of pertussis vaccine administration including localized pain, nonspecific irritability and fever. The significance of these signs/symptoms as predictors of subsequent problems with pertussis vaccine administration, if any, is not certain.

4. Although individuals predisposed to seizures are apparently at increased risk of having a seizure associated with pertussis vaccine administration, the occurrence does not predict the occurrence of the encephalitis which is thought to be due to an immunological phenomenon. Therefore, an individual with a seizure disorder is at no greater risk for the severest of the complications than the general public.

Recommendations:

Pertussis Vaccine Contraindicated

1. Children on anticonvulsants may be presumed to have an ongoing seizure disorder and, therefore, are at risk for a seizure with pertussis vaccine administration.

2. Any child with unstable or progressive central nervous system pathology is at risk for seizures.

3 Vaccine should not be given if the child has the following reactions: (1) persistent unconsolable screaming for three hours or more (2) a severe neurological reaction (3) a hyporesponsive.

shock-like state (4) temperature of 40.5° C(104° F) or greater, unexplained by another cause within 24 hours following immunization (5) a convulsion within 48 hours following immunization (6) an allergic reaction to the vaccine.

Pertussis Vaccine Not Contraindicated

1. A child with a stable, nonprogressive neurological disorder (e.g., cerebral palsy) without a concommitant seizure disorder may receive vaccine. The fact that children with cerebral palsy are more likely to have seizures than the general population does not contraindicate the vaccine for them.

2. Neonates with seizures during the first 48 hours of life who subsequently become seizure free and are tapered off anticonvulsants may (and should) receive pertussis vaccine.

Comments:

In cases where the issues are not clear cut, risk should be balanced with benefit. A five-year-old, for example, whose neurological status is in doubt (and who, therefore, is at some possible risk for seizures) would be less seriously ill with pertussis than an infant. Thus, in this case, the vaccine might be omitted.

When pertussis is withheld, the children's dose of DT should be given to achieve maximal immunological response.

HANDICAPPING
CONDITIONS

MENTAL DISABILITY

Mental disability (retardation) is a condition in which the central processing system of the brain is impaired and it is manifested by lowered intelligence and problems with conceptual or abstract thinking. Diagnosis is based on three criteria:

1. Subaverage intelligence

2. Adaptive behavior deficits

3. Origination of deficits before age eighteen.

Educators usually use the following classification for mentally impaired pupils:

Mild—problems with sensory input occur at the same frequency and severity as with the general population. Motor skills may be affected by the inability of the brain to process information rather than a problem with the neuromuscular system.

Moderate--hearing and vision problems occur more frequently due to structural defects, muscle imbalance, atrophy and infections. These problems need to be identified and treated to provide maximum opportunity for sensory input. There is a higher likelihood of motor performance difficulties because of hypotonia, muscular weakness and laxity and lack of ability to process sensory input and respond.

Severe/Profound—frequently severe hearing and vision deficits which are difficult to classify with standardized testing. Motor disabilities interfere significantly with ability to perform and may be due to central processing deficits or motor control.

Implications

Health concerns generally increase with the severity of the retardation and specific health problems are addressed in the section on "high incidence health concerns".

References

Blackwell M. (1979). Care of the mentally retarded. Boston: Little, Brown & Company.

Classification in mental retardation (1983). Washington, D.C.: American Association on Mental Deficiency.

Diagnostic and statistical manual of mental disorders (3rd Edition) (1980). Washington. D.C.: American Psychiatric Association.

Kiersley. R.B and Sigel. I.E. (Ed.) (1979). Infants at risk: assessment of congitive functioning. New York: John Wiley and Sons.

Matson, J. and Barrett, R. (Eds.) (1982). Psychopathology in the mentally retarded. New York: Grune and Stratton.

Menoloscino, F.J. and Egger. M.L. (1978). Medical dimensions of mental retardation. Lincoln, NE: University of Nebraska Press.

PHYSICAL
DISABILITIES

MYELOMENINGOCELE/SPINA BIFIDA

Myelomeningocele is a complex birth defect and may affect any of the body systems: motor, sensory, genito-urinary, skeletal, cognitive, and neurological. It is caused by nonfusion of the dorsal arches of the vertebrae and resulting herniation of spinal cord, cerebral spinal fluid, dura and meninges which form a cystic mass on the back. Areas of motor and sensory deficits depend on the level of the defect. Eighty-five percent of children with myelomeningocele have hydrocephalus. A ventriculo-peritoneal shunt is the most common surgical management of this.

Implications

Members of the multidisciplinary team in addition to the Special Education Nurse will be involved with this child and may include parents and family members, the physical therapist, occupational therapist, classroom teacher, speech clinician, and other support staff.

A variety of adaptive equipment may be used with the pupil such as a parapodium, braces of various types, walkers, and crutches. Pupils should be monitored closely for skin breakdown because of the added problem of sensory loss in affected areas.

The neurogenic bladder is a concern with children who have myelomeningocele. Approaches to urinary management may include Crede', intermittent catheterization, or appliances. The Special Education Nurse will be involved in establishing and implementing a care plan as part of the pupil's educational programming.

Bowel training may be accomplished with a routine pattern of defecation, stool softeners, or suppositories. Prevention of constipation is best managed by diet.

Observation of the shunt for malfunction and infection is needed. Symptoms of possible shunt malfunction may include increased intra-ocular pressure, vomiting, irritability, lethargy, seizures, swelling and redness along the shunt tract, headaches, decreased school performance, eye deviations, (as esotropia or exotropia).

References

Wolraich, M.L. & Henderson, M. (1985). What you should know about your child with spina bifida. An Iowa University Affiliated Program Publication.

SUGGESTIONS FOR AN IEP: MYELOMENINGOCELE/SPINA BIFIDA

GOAL 1: Develops self-directed management of spina bifida as measured by improved school attendance and decrease of incidence of complications.

SHORT TERM
OBJECTIVES:

1.1 Follows prescribed schedule of medical supervision 100% of the time as verified by parent/pupil and Special Education Nurse during school year

1.2 Recognizes signs of a full bladder with ___% accuracy by (date).

1.3 Lists benefits of emptying the bladder at appropriate intervals with ___% accuracy by (date).

1.4 Demonstrates correct procedure for clean catheterization with 100% accuracy by (date).

1.5 Takes medication as prescribed 100% of time as verified by parent/pupil and Special Education Nurse or teacher during school year.

1.6 Demonstrates correct procedure for testing function of shunt by (date) as verified by Special Education Nurse or teacher.

1.7 Maintains adequate fluid intake as prescribed and as verified by parent/pupil and Special Education Nurse or teacher during school year

1.8 Maintains adequate nutrition by eating a well-balanced diet for ___% of time as verified by parent/pupil and Special Education Nurse or teacher during school year

1.9 Follows an appropriate physical activity routine ___% of time as verified by parent/pupil and Special Education Nurse or teacher for (#) months.

1.10 Maintains regular bowel function ___% of time as verified by parent/pupil and Special Education Nurse or teacher by (date).

1.11 Utilizes and maintains prescribed appliances ___% of time as verified by parent/pupil and Special Education Nurse or teacher during school year (crutches, braces, catheter).

1.12 Describes benefits of daily bathing with ___% accuracy by (date).

GOAL 2: Knows that spina bifida is a chronic condition requiring continuous medical supervision and self-management as measured by the Special Education Nurse.

SHORT TERM
OBJECTIVES

2.1 Describes the consequences of not complying with treatment regimen with __% accuracy by (date).

2.2 Plans and follows a life-long appropriate exercise regimen as verified by parent/pupil and Special Education Nurse by (date).

2.3 Describes symptoms of complications and appropriate action to improve them with __% accuracy by (date).

2.4 Follows referral to vocational rehabilitation and reports results to Special Education Nurse by (date).

GOAL 3: Increases knowledge of anatomy and pathophysiology related to spina bifida as measured by Special Education Nurse designed test.

SHORT TERM
OBJECTIVES

3.1 Describes normal anatomy of the spine and spinal cord by labeling a diagram with __% accuracy by (date).

3.2 Explains function of the spine and spinal cord with __% accuracy by (date).

3.3 Lists current theory of etiology of spina bifida with __% accuracy by (date). (etiology unknown, but generally thought to result from genetic predisposition; theories of causation: incomplete closure of neural tube in embryo. neural tube forms but ruptures)

Reprinted with permission from:
Individualized and prescriptive school nursing services for physically handicapped students, 1980.
School Nurse Advocates
P.O. Drawer 1538
Garden Grove, CA 92640

CEREBRAL PALSY

Cerebral palsy is not a disease. It is a group of symptoms caused by an injury to the immature brain before, during, or after birth. The injury is permanent and non-progressive. There are often associated conditions such as convulsive disorders, mental retardation, hearing or visual deficits, and others.

The site of the cerebral insult and developmental state of the brain at the time of the injury and the extent of trauma determine the type and extent of the disability. Major types are:

Spastic (Pyramidal)--damage to the motor cortex or to the pyramidal tract of the brain.

Chorecathetoid (Extrapyramidal)--damage to neural pathways outside the pyramidal tract, especially in the basal ganglia.

Implications for Programming

The multidisciplinary approach is essential for the pupil with cerebral palsy. Services from the occupational therapist, the physical therapist, the Special Education Nurse, the speech therapist, the special education teachers, and hearing and vision teachers and the involvement and cooperation of the parents and family members and the child's physician(s) will be required to enable the pupil to reach the highest potential. The psychologist and social worker and other professionals may become involved with the pupil and the family to maximize the benefits of the educational process.

References

Bleck, Eugene, M.D., and Nagel, Donald A., M.D. (1975). Physically handicapped children - A medical atlas for teachers. New York: Grune and Stratton, Inc.

Bobath, K. (September 29 1972). "Nursing the child with cerebral palsy", Nursing Mirror, 135:20-23.

Finnie, Nancy (1975). Handling the young cerebral palsied child at home. New York: E.P. Dutton & Company.

Palmer, S. and Ekvall, S. (1978). Pediatric nutrition in developmental disorders. Springfield, IL: Thomas.

Wright, Pauline, R.N. (1983). Caring for the child with disabilities: A manual for health care workers. University Hospital School. Iowa City, IA.

SUGGESTION FOR AN I.E.P.: CEREBRAL PALSY

GOAL 1: Develops self-directed management of cerebral palsy as measured by improved participation in school activities and improved self-concept.

SHORT TERM
OBJECTIVES

1.1 Follows prescribed schedule of medical team supervision 100% of time during school year as verified by parent/pupil. Special Education Nurse and teacher.

1.2 Follows prescribed physical activity regimen 100% of the time as verified by parent/pupil, Special Education Nurse and teacher during school year.

1.3 Uses appliances as prescribed 100% of the time as verified by parent/pupil and Special Education Nurse, teacher during Special Education year.

1.4 Participates in __% of the school's social and recreational activities as verified by teacher/parent/pupil. Special Education Nurse and teacher during school year.

1.5 Takes medication as prescribed 100% of the time as verified by parent/pupil, Special Education Nurse and teacher during school year

1.6 Maintains adequate nutrition by eating prescribed diet 90% of the time as verified by parent/pupil, Special Education Nurse and teacher during school year.

GOAL 2: Knows that CP is a chronic disorder requiring continuous medical supervision and self-management as measured by Special Education Nurse designed test.

SHORT TERM
OBJECTIVES

2.1 Plans and describes a life-long appropriate physical activity regimen with __% accuracy by (date).

2.2 Describes symptoms of not complying with treatment regimen with __% accuracy by (date).

2.3 Describes symptoms of complications and appropriate action to improve them with __% accuracy by (date).

2.4 Describes and wears protective gear appropriate to activities with __% accuracy by (date).

2.5 Plans and follows a routine of hygiene __% of the time as verified by parent/pupil and Special Education Nurse, and teacher during school year

2.6 Follows referral to vocational rehabilitation for job evaluation/training and reports results to Special Education Nurse by (date).

GOAL 3: Copes with related emotional, social, family and financial problems as evaluated by parent/pupil and Special Education Nurse.

SHORT TERM
OBJECTIVES

3.1 Requests assistance if social, emotional, or financial problems develop as verified by Special Education Nurse records by (date).

3.2 Follows referral to appropriate community resources and reports results to Special Education Nurse by (date).

3.3 Interacts with family, classmates, and school personnel to allow them to play a supportive role in his/her illness as evaluated by parent/teacher, Special Education Nurse and teacher by (date).

3.4 Formulates and utilizes coping skills appropriate to his/her disorder as verified by parent/teacher, Special Education Nurse and teacher by (date).

GOAL 4: Increases knowledge of the pathophysiology of cerebral palsy (CP) as measured by Special Education Nurse designed test.

SHORT TERM
OBJECTIVES

4.1 Describes the neurological aspects of CP with ___% accuracy by (date). (CP is a complex disorder of the CNS function characterized by abnormalities of movement resulting from malfunction of the motor centers and pathways of the brain. In addition to motor disabilities, usually there are other manifestations of organic brain damage such as seizures, mental retardation, sensory and learning defects which may be complicated by behavior and emotional disorders.)

4.2 Describes the effects of CP on physical performance with ___% accuracy by (date). (Inability to perform adequately the usual activities of daily living such as walking, use of hands, and communicating verbally.)

4.3 Describes current theory of etiology with ___% accuracy by (date). (prenatal infections: rubella, toxoplasmosis, herpes simplex and other viral diseases; maternal anoxia, anemia, placental infarcts and abruptio placenta; prenatal anoxia, cerebral hemorrhage, toxemias, RH factor; toxins and drugs; perinatal anoxia, due to anesthesia, analgesic drugs, prolonged labor, placenta previa or abruptio, respiratory obstruction; trauma during delivery; complications of birth;

i.e., prematurity. hemolytic disorders, infections. hypoglycemia, hyperbilirubinemia; post natal: trauma, infections; i.e., meningitis, encephalitis, brain abscess, anoxia; vascular accidents; lead poisoning).

4.4 Describes terms associated with CP with __% accuracy by (date). (spasticity. dyskinesia, ataxia. hemiplegia. quadriplegia. monoplegia. triplegia. nystagmus, athetoid)

Reprinted with permission from:
Individualized and prescriptive school nursing services for physically handicapped students, 1980.
School Nurse Advocates
P.O. Drawer 1538
Garden Grove. CA 92640

ASTHMA

There are basically three things which happen when one has an asthma attack. (1) The muscles surrounding the bronchial tubes go into spasm; (2) tubes tighten up and constrict the passage; and (3) mucus accumulates in the air passages which in turn narrows the size of the air passage. A child's susceptibility to suffer spasms may be inherited. An allergy to pollens, molds, animal hair. feathers, dust, and occasionally foods may cause attacks. Acute infections, excessive exercise, fatigue, or an emotional upset may induce an attack. Some people who experience asthma attacks have a preceeding warning signal such as a tickle in the back of the throat, a hacking cough. or a feeling of tightness in the chest. Pale appearance, flared nostrils, fast noisy panting may also be present.

Implications for Programming:

The child with asthma may need special help to keep up academically due to higher rate of absenteeism. In addition some of the prescriptions may temporarily hamper the child's ability to concentrate or may induce apparent hyperactivity. Modifications may need to be made in the child's program at school. The child with asthma can generally tolerate non-endurance physical education. Swimming. calesthenics and other stop and go sports are usually well tolerated. Allow relay games with exercise periods of one to five minutes and rest periods for five minutes or longer. Some helpful hints for the classroom teacher are:

1. Pupils with asthma should be seated away from the chalk board and open windows.

2. Irritants should be minimized or avoided when possible such as smoke, chalk dust, animal fur, odors from chemicals. cosmetics, or art supplies, molds and dust, and/or exposure to cold.

3. Training in relaxation techniques, diaphragmatic breathing, and abdominal coughing may be a part of the pupil's programming.

4. Modifications of the diet because of food allergies should be carefully followed.

5. Adherance to any prescribed medical treatment should be encouraged.

Many materials may be ordered and purchased through the American Lung Association. One is "Superstuff" a packet with a children's book, poster, record, and other materials. There is also a film "Understanding Asthma in the Classroom." The Iowa Chapter of the American Lung Association is located at 1321 Walnut. Des Moines, IA 50309 (1-800-362-1643).

SUGGESTIONS FOR AN I.E.P.: ASTHMA

GOAL 1: Improves school attendance by ___%

SHORT TERM OBJECTIVES	STRATEGIES MATERIALS
1.1 Takes medications as prescribed as verified by the parent/pupil school personnel for a 2 1/2 month period	1. Health counseling 2. Consults with staff members and parents by conference, telephone, or letter. 3. Parent involvement 4. Management of health problems on school site
1.2 Lists his/her known allergen(s) and describes method(s) of avoidance by February 1.	1. Health counseling 2. Consulting with parent 3. Parent involvement
1.3 Demonstrates avoidance of the known allergen(s) as measured by parent/teacher/Special Education Nurse observations by May 15.	1. Health counseling 2. Parent involvement 3. Management of health problem on school site. 4. Consulting with staff members
1.4 Demonstrates effective self care of upper respiratory infections as measured by parent/Special Education Nurse observation by May 15	1. Health counseling 2. Parent involvement 3. Management of health problem on school site

GOAL 2: Describes and demonstrates appropriate bronchial hygiene techniques as measured by Special Education Nurse observations.

SHORT TERM OBJECTIVES

2.1 Demonstrates breathing exercises that minimize severity of asthmatic episodes according to instruction as evaluated by Special Education Nurse evaluation by (date).

2.2 Describes the benefits of postural drainage and percussion with 80% accuracy on Special Education Nurse designed test by (date).

2.3 Demonstrates coughing technique used with postural drainage according to instruction as evaluated by Special Education Nurse observation by (date).

GOAL 3: Increases knowledge of the physiology of asthma as measured by Special Education Nurse designed pre/post test.

SHORT TERM
OBJECTIVES

3.1 Describes normal respiratory anatomy by labeling a diagram with 80% accuracy by (date).

3.2 Explains the function of the respiratory system with 80% accuracy on a Special Education Nurse developed test by (date).

3.3 Names three physiological changes that occur during an asthmatic episode with 100% accuracy by (date).

3.4 Lists three methods of positive intervention during an asthmatic episode with 100% accuracy by (date).

Reprinted with permission from:
Individualized and prescriptive school nursing services for physically handicapped students, 1980.
School Nurse Advocates
P.O. Drawer 1538
Garden Grove, CA 92640

HEART DISEASE

Congenital heart disease includes those defects which are present at birth. These may be recognized and surgically corrected during the new-born period, or may not manifest themselves until later. The child with significant heart defects may experience fatigue, poor nutrition and growth, and respiratory infections which require frequent hospitalizations. It is essential that school professionals work closely with the medical team to assure an adequate educational program within the restrictions required by the health status of the pupil.

Other heart conditions may develop following bacterial infections which will require careful management and cooperation between home and school. Notification to parents of any streptococcal infection of classmates or staff may be needed if the pupil requires precautionary antibiotic therapy.

For the student with a spinal cord defect or hydrocephalus which has been corrected with a shunt it is important to determine where the shunt is located. If the distal terminal is in the vena cava or the atrium of the heart it is important that the student is covered by Sub-acute Bacterial Endocarditis (SBE) precautions*.

Implications for Programming

If a pupil is on routine SBE precautions, it is essential that the Special Education Nurse alert school personnel working with the student to report any injury to the oral or nasal mucosa so that treatment may be started immediately. When toothbrushing is a part of the daily routine at school. special care must be taken to avoid injury to gum tissue or the oral mucosa.

*Information available through Division of Pediatrics, University Hospitals, Iowa City, IA 52242.

SENSORY IMPAIRMENTS

HEARING IMPAIRMENT

Communication Disordered pupils have deficits in their ability to receive, process, or respond to auditory stimuli. The etiology of the deficit affects both the classification and severity of the impairment. Types of loss referred to by the audiologist are:

1. Conductive loss—mechanical loss in transmission of sound from the source to the inner ear. Causes of obstruction may include:

    a. obstruction of the canal due to cerumen, atresia, or foreign bodies.
    b. abnormality of the tympanic membrane due to disease or trauma.
    c. abnormal function of the ossicles due to fluid build-up or ossification of the ligaments.
    d. malfunction of the eustacian tubes.

2. Neurosensory loss—a loss of transmission from the middle ear along the 8th cranial nerve. Causes of loss may include damage due to bacterial or viral infection, high temperature, trauma, medications, or heredity.

3. Central auditory problems (cortical deafness)—although sound is transmitted through the conductive system and nervous system the brain is unable to process or respond to the stimulus.

Implications for Programming

The major concern educationally is the effect on communication and the development of speech. It is important that impairment be identified early so that medical treatment and rehabilitation measures can be initiated.

The Special Education Nurse can be invaluable as the liaison between the audiologist, the physician, the family, the pupil, and the classroom teacher in coordinating efforts toward remediation and adaptation of the educational program to maximize learning.

Further information can be found in the book by Haslam listed in the reference section and on the following chart showing effect of hearing loss on educational needs and programming.

IMPACT ON LEARNING

SEVERITY OF LOSS	EFFECT OF HEARING LOSS	EDUCATION NEEDS & PROGRAMS
Normal 0-26dB	None.	None.
Fluctuating	May have difficulty with faint or distant speech.	Favorable seating in regular classroom. Possible speech reading. Frequently this is a medically correctable problem.
Mild Loss (27-41dB)	May have difficulty with faint or distant speech.	Favorable seating in regular classroom. Possibly speech reading and hearing aid.
Moderate Loss (42-56dB)	Usually understand conversational speech at a distance of 3 to 5 feet without great difficulty. May have articulation problems. May miss as much as 50% of class discussion if not in line of vision.	Needs Special Education follow up. Hearing aid evaluation and training in its use. Special training in speech and language. Preferential seating. Special assistance in curriculum subjects.
Moderate to Severe (57-71dB)	Conversation must be loud to be understood. Will have difficulty in class and group discussions. Is likely to be deficient in vocabulary, language comprehension and usage. Is likely to have defective speech.	Needs Special Education follow up. Favorable seating. Speech-reading and auditory training. Special help in language skills, vocabulary development; usage reading, writing grammar, etc.
Severe (72-91dB)	May hear sound of loud voice about one foot from ear, identify some environmental sounds, and distinguish some vowels. Both speech and language problems.	Needs Special Education follow up. Preferential seating. Most usually training by educator of the deaf. Special emphasis on auditory training speech and language.
Profound (92dB or more)	Deaf. May hear some very loud sounds. Speech and language must be developed by careful and extensive training. Relies on vision rather than hearing as primary avenue for communication.	Teaching by educators of the deaf.

(Freely adapted from: Litke, Sp. 67 and Iowa Department of Public Instruction, "Special Education Programs for Hearing Handicapped Pupils.")

References

Articles:

Downs, M.P. (1975). "Hearing loss: Definition, epidemiology and prevention," Public Health Reviews, Vol. IV, Nos. 3 and 4. 255-277.

Gerber. Benard (August, 1980). "Psychiatric consultation in a school program for multihandicapped deaf children," American Annals of the Deaf, 579-585.

Hack, Carole (Septmeber, 1980). "Creating visual materials for multihandicapped deaf learners," American Annals of the Deaf, 702-709.

Periodicals:

ASHA Monographs
Ear and Hearing, Baltimore
Journal of Communication Disorders
Journal of Speech and Hearing Disorders
Journal of Speech and Hearing Research
Journal of American Audiology Society

Organizations:

Alexander Graham Bell Association for the Deaf
3417 Volta Place N.W.
Washington, D.C. 20007

American Speech and Hearing Association
10801 Rockville Pike
Rockville, MD 20852

Council for Exceptional Children Information Center
1920 Association Drive
Reston, VA 22091

VISION IMPAIRMENT

Studies have shown that 80% of all learning is accomplished through the visual process.

1. Research shows that only 1 of 4 children with faulty vision complain.

2. An estimated 1 in every 20 preschoolers ages 3-5 have vision problems. Among school-age children ages 6-17, an estimated 1 in 4 have vision problems. In Iowa, approximately 160,000 school-age children have vision problems.

3. Refractive errors requiring eyeglasses exist in approximately 30% of children. The most common cause is myopia (usually first diagnosed at age 10-12). It is important to remember that the most common refractive error (not requiring glasses) is hyperopia because most children are normally born farsighted. Six to seven percent of children show a refractive error by age 6 years. Fifteen percent show a refractive error by age 15 years.

4. There are approximately 41,000 children under the age of 20 in the U.S. who can be classified as legally blind. This figure represents 8% of all blindness.

5. Incidence of strabismus is approximately 3% in the total population. The onset of 45% of strabismus is before age 2; another 40% have the onset between ages 2-4 years.

6. Approximately 2-4% of the population have amblyopia. Of amblyopic preschoolers, 40% have a refractive error; 60% have a strabismus.

The purpose of vision monitoring is to detect those children who deviate from "normal" standards of visual functioning. Screening may identify children who need referral for professional eye evaluations or those who may require special considerations in the educational environment.

Screening is not diagnostic. Screening will not locate every child who needs eye care, nor will every child so referred need glasses or treatment.

Observation along with vision screening is essential in making appropriate referrals. The following behaviors and complaints may be present: rubs eyes excessively, shuts or covers one eye, tilts or turns head to see, blinks more than usual, stumbles over small objects, unable to see distant or close things, squints or frowns frequently, sties or crusted eyelids, cross eyed, repeated headaches, complains of blurry vision, visual motor difficulties, fine or gross motor difficulties, one

eye seems to "wander" (in, out, up, down), red eyes, ptosis, excessive tearing, sudden loss of vision, see flashing lights, pain in eyes, undue sensitivity to light, eyes itch, burn, or feel scratchy, dizziness or nausea following close work.

There are numerous visual acuity screening devices on the market. Some of these include:

1. Snellen E or Letter
2. HOTV
3. Lighthouse
4. Parsons
5. Dr. Pepper
6. Titmus Machine
7. Keystone Machine
8. Peabody Functional
9. STYCAR-for Handicapped
10. Optokinetic Drum

Screening for depth perception, pupillary response, corneal light reflex (Hirschberg), near point convergence, tracking, ability to pick up small items (1" or less) of various colors, cover/uncover test, color discrimination, and red reflex add to the level of more indepth screening which is relevant to special needs pupils.

The Special Education Nurse may be involved in screening and in modifying the school environment to meet the needs of the visually impaired student. In AEAs where teachers of the visually impaired are employed a cooperative assessment can be most appropriate. Visually impaired students may need special seating arrangements. Some factors to consider would be:

1. lighting—is bright, dim or average best, light or dark backgrounds?
2. storage--must a magnifier, tape recorder, braille writer and/or typewriter be close at hand? Are books going to take up extra space?
3. electrical outlets—how many machines must be used at one time?
4. flexible seating--does the pupil need to move up to the board for certain activities?

Sharing results of vision screening and exams with the teacher is important. The pupil may require larger print, materials which are not mimeographed, printing which is clear or other special considerations.

Safety factors such as knowing where the exit doors are located, position of steps and stairwells, as well as outdoor safety may need to be discussed with the teacher and parents.

Referrals may be made for a professional diagnostic evaluation and should include the results of your screening. The screening should be at the highest level possible to include as much information as possible for the examiner. For those pupils who are not able to be examined by conventional measures, the examiner may choose to order a visually evoked response exam.

Several examples of vision screening tools, test report forms and reports to both parents and physicians are included in this section.

MEDICATIONS WHICH MAY EFFECT VISION

Drug	Possible Vision Side Effects[1]
Clonopin	abnormal eye movements, diplopia, "glassy-eyed" appearance
Diamox	used in glaucoma treatment, transient myopia
Dilantin	nystagmus
Dimetapp	visual disturbance, mydriasis (increased pupil size)
Librium	blurred vision
Mellaril	decreased visual acuity, impairments of night vision, brownish coloring of vision, pigmentary retinopathy
Navene	blurred vision
Novahistine	diplopia
Phenobarbital (and other barbituates)	dilated pupils, blurred vision, increased intra-ocular tension (glaucoma-like conditions)
Prednisone	prolonged use may produce posterior subcapsular cataracts, glaucoma with possible damage to the optic nerves, increased ocular pressure. Suggest baseline and periodic eye examination including slit lamp, funduscopy, and tonometry
Tegretol	blurred vision, visual halucinations. transient diplopia and oculomotor disturbances, possible conjunctivitis and scattered, punctate cortical lens opacities
Thorazine	deposits of fine particulate matter in the lens and cornea, advancing to star-shaped cataracts with extended use (these symptoms tend to occur after two years or more of use), pigmentary retinopathy
Valium	blurred vision

[1]Most of this column is taken from the Physician's Desk Reference, Medical Economics Co., Oradell, NJ

5/84

TEACHER'S REQUEST FOR VISION EVALUATION

Student's Name _____

Teacher's Name _____

School: _____

Address: _____

School Nurse's Name: _____

Remarks: _____

_____

One check ( ) should be for signs or symptoms occurring occasionally, and two checks ( ) for those occurring frequently.

A's--Appearance of the Eyes:

Eyes crossed or turning in, out, or moving independently of each other.	____	____
Reddened eyes, watering eyes, encrusted eyelids, frequent styes.	____	____

B's--Behavioral Indications of Possible Vision Difficulty

Body rigidity while looking at distant or near objects or while performing in class.	____	____
Avoiding close work.	____	____
Unusually short attention span or frequent daydreaming.		
Turning of head so as to use one eye only, or tilting of head to one side.		
Placing head close to book or desk when writing.	____	____
Frowning or scowling while reading, writing, or doing blackboard work.	____	____
Using unusual or fisted pencil grasp, frequently breaking pencil, and frequent rotation of paper when writing.	____	____
Spidery, excessively sloppy, or very hard to read handwriting.	____	____
Excessive blinking or excessive rubbing of eyes.	____	____
Closing or covering one eye.	____	____
Dislike for tasks requiring sustained visual concentration. Nervousness, irritability, restlessness, or unusual fatigue after maintaining visual concentration.	____	____
Losing place while reading and using finger or marker to guide eyes and keep place while reading.	____	____

Saying the words aloud or lip reading.	____	____
Difficulty in remembering what is read.	____	____
Skipping words and re-reading.	____	____
Persistent reversals after the second grade.	____	____
Difficulty remembering, identifying, and reproducing basic geometric forms.	____	____
Difficulty with sequential concepts.	____	____
Confusion of similar words.	____	____
Difficulty following verbal instructions.	____	____
Poor eye-hand coordination and unusual awkwardness including difficulty going up and down stairs, throwing or catching a ball, buttoning or unbuttoning clothing, or tying shoes.	____	____
Displaying evidence of developmental immaturity.	____	____
Low frustration level, withdrawn, and difficulty getting along with other children.	____	____

C's--Complaints Associated with Using the Eyes:

Headaches, nausea, and dizziness.	____	____
Burning or itching of eyes.	____	____
Blurring of vision at any time.	____	____

FUNCTIONAL VISION SCREENING TEST

Date: _____ Location/Classroom: _____

Screened by: _____

Name _____ Age: _____ DOB: _____

Yes	No		
		1. Pupillary reflex (prompt/sluggish)	Eye preference R, L. alternating.
___	___	Direct	Describe if present: Ocular
___	___	Consensual	deviations, nystagmus, unequal
___	___	2. Blinks at shadow	ocular movements, crusting or
		3. Turns eyes to light	discharge, apparent visual self-
___	___	Right side	stimulatory behavior, any other
___	___	Left side	problems:
		4. Momentary regard	
___	___	Object	
___	___	Person	
		5. Prolonged regard	
___	___	Object	
___	___	Person	
___	___	6. Eye contact	Record results of: Hirshberg
___	___	7. Fixates on 4" object	Cover Test
		8. Shifts gaze	Red Reflex
___	___	Randomly	
___	___	Voluntarily	Describe abnormalities of:
		9. Visually directed reach	pupils, iris, cornea, lens, sclera
___	___	Attempted	conjunctiva, lids, visual field,
___	___	Accurate	other
		10. Tracks horizontally	
___	___	Light	
___	___	Object	
___	___	Tracks past midline	
		11. Tracks vertically	Results of any opthalmological exams
___	___	Light	
___	___	Object	
		12. Tracks circularly	Action taken:
___	___	Light	
___	___	Object	
		13. Picks up or tracks	
___	___	Object less than 1" size	
___	___	Ball rolling across table	
___	___	Persons moving about room	
___	___	14. Visually recognizes caretaker	
___	___	15. Covergance/accomodation present	

(SAMPLE)

TO: Parents of _____

FROM: Special Education Nurse

DATE: _____

RE: Vision Screening

Because your child's eyes are very important to his/her future, the Special Education Nurses conduct periodic vision screening.

SCREENING TESTS DO NOT SUBTITUTE FOR COMPLETE AND REGULAR EXAMINATIONS.

During the vision screening survey at _____ School on _____(date), it was found that your child did not satisfactorily complete the vision screening test. This is an indication that your child needs a more thorough eye examination. It is recommended you consider taking your child to an eye specialist to be examined. Please ask your eye specialist to fill in the attached form at the time of your child's examination. Please return the form to the school.

_____
Special Education Nurse

_____
Principal

(SAMPLE FORM FOR USE WITH TITMUS MACHINE)
Vision Screening Form

_____
Date

_____
School

NAME OF STUDENT: _____

	Satisfactory	Not Satisfactory
1. Visual Acuity		
2. Hyperopia		
3. Lateral Phoria (Far)		
4. Lateral Phoria (Near)		
5. Vertical Phoria (Far)		
6. Vertical Phoria (Near)		

TO THE PARENTS: There are indications that your child needs a more thorough eye examination. It is recommended you take your child to your eye specialist to be examined. Please have him answer the questions below and return this form to us.

_____
Special Education Nurse

GENERAL DIAGNOSIS: _____

_____

SPECIAL RECOMMENDATIONS: _____

_____

GLASSES ARE PRESCRIBED: _____

_____

NEW LENSES ARE PRECRIBED: _____

_____

_____ _____
Date Signature of Examiner

SAMPLE

VISION SUMMARY

Name _____ Birth Date _____
Parent's Name _____
Parent's Address _____
Date of last eye examination by Ophthalmologist or Optometrist _____
Vision History: glasses __ cataract __ coordination __ other __

_____ (specify)

To Be Completed by Screener

Visual Acuity:
Near point R.E. __ L.E. __ B __ Far point R.E. __ L.E. __ B
Screening with glasses _____ without glasses _____
Test procedure used _____
Comments on testing _____

Recommendations: Date _____
referral _____
non-referral _____ Signature of screener

To Be Completed By Ophthalmologist or Optometrist

Visual Acuity:
Near Point without lenses R.E. _____ L.E. _____ B _____
with lenses R.E. _____ L.E. _____ B _____
Far Point without lenses R.E. _____ L.E. _____ B _____
with lenses R.E. _____ L.E. _____ B _____
Refractive Error: R.E. _____
L.E. _____
Coordination: _____
Organic: _____
Prognosis: _____
Were glasses prescribed: yes ____ no ____
Glasses should be worn: all the time ____, for close work only ____
for distance only ____
Other recommendations: _____

Date _____ Signature _____

Date of return visit _____

Please return to:
Special Education Nurse
(Address)

SAMPLE

Summary of Ophthalmologist's Examination and Treatment
for Incorporation in Educational Plan

Dear Doctor:

Your assessment of this child's disease, treatment, and prognosis will be valuable in future educational placement and training. Answers to the brief questions below would be most helpful in formulating the best possible educational program for this child.

I. Examination Results

A. Diagnosis:
B. Distance visual acuity:
C. Near visual acuity:
D. Is binocular vision and stereopsis present:

II. Treatment

A. Medications prescribed and frequency:
B. Are glasses helpful?
Contact lenses?
C. Should glasses be worn constantly?
Only when reading?
D. Suggested classroom changes
1. Seating location:
2. Lighting:
3. Large print books:
E. Low-vision aid helpful?
F. If prescribed, how should low-vision aid be used?

III. Prognosis

A. Stationary or progressive visual loss?
B. Anticipated end visual result if disease is progressive?
At what age?
C. Is surgery a possibility now or in the future?

PUPIL NAME: _____

DATE: _____ SIGNED: _____ M.D.

References

Bader, D., and Woodruff. M.E. (1980). "The effects of corrective lenses on various behaviors of mentally retarded persons." American Journal of Optometry, 57, (7), 447-459.

Bankes, J.L.K. (1974). "Eye defects of mentally handicapped children." British Medical Journal, 2, 533-535.

Courtney, G.R. and Health, G.G. (1971). "Color vision deficiency in the mentally retarded: Prevalence and a method of evaluation." American Journal of Mental Deficiency. 76, (1), 48-52.

Cress, P., Spellman, C.R., and Benson, H. (1984). "Vision care for the preschool child with handicaps." Topics in Early Childhood Special Education, 41-50.

Johnson, J.L., Spellman, C.R., Cress, P.J., Sizemore. A.C., and Shores, R.E. (1983). "The school nurse's role in vision screening for the difficult-to-test students." Journal of School Health, 53, (6), 345-350.

O'Chuk, Grayce Xenia, Special education: Student vision screening. House of Special Books, P.O Box 7811, LaVerne, CA 91750 ($14.00).

Sagaties, M.J. (1982). "Screening for strabismus and amblyopia." Nurse Practitioner. 19-23.

Wassenberg, C. (1981). "Common visual disorders in children." Symposium on Ophthalmic Nursing, 16, (3), 479-485.

Woodraff, M.E. (1977). "Prevalence of visual and occular anomalies in 168 non-institutionalized mentally retarded children." Canadian Journal of Public Health, 68, 225-322.

Woods, G.E. (1979). "Visual problems in the handicapped child." Child Care Health and Development, 5, 303-322.

Wright, K.W. (1982). "An update on amblyopia and strabismus." Consultant, November, 97-113.

GENETIC
DISORDERS

GENETIC SYNDROMES

There are numerous syndromes which are seen among handicapped pupils and a few will be described below. Much of the following information has been collected from the book, Recognizable Patterns of Human Malformation, by Smith, listed in the reference section. Another resource which can be helpful to the Special Education Nurse is: Regional Genetic Consultation Service of Iowa, State Department of Health, Lucas State Office Building, Des Moines, IA 50319, Phone: 515/281-4906.

Fetal Alcohol Syndrome

Alcohol is now recognized as the most common major teratogen to which the fetus is liable to be exposed.

Studies have shown fetal alcohol syndrome may result in mental deficiency, cerebral palsy, fine motor deficits, microcephaly, facial and skeletal dysmorphia, heart murmur, and cleft palate to name a few.

The more subtle clinical features have been observed when the mother has consumed four to six drinks per day.

Abnormal brain development and lowered intellectual functioning, probably due to a reduced number of brain cells, are considered the most serious effects of ethanol and its by-products.

Prader-Willi Syndrome

The etiology of Prader-Willi Syndrome is unknown. A specific interstitial deletion in the Number 15 chromosome at the Q11-13 region has been found by high-resolution prophase banding microscopy in about 50% of the cases of Prader-Willi. It has also been thought that the syndrome may represent the consequence of a single localized defect in early hypothalmic and/or midbrain development.

Symptoms noted in the Prader-Willi Syndrome may vary in severity and include small stature, obesity from infancy to six years of age or beyond, almond shaped or slanting palpebral fissures, strabismus, mental deficiency, hypotonia, small hands and feet, and small penis and cryptorchidism.

Symptoms which may be seen occasionally are poor fine and gross motor coordination, upsweep of frontal scalp, microcephaly, seizures, clinodactyly, syndactyly, diabetes mellitus, and scoliosis.

A common and outstanding feature of the syndrome includes the bizarre and binge type eating. Parents may comment that "this child never seems to know when he is full." It is most common in boys, but girls have had this clinical feature.

Fetal Rubella Syndrome

The Rubella Virus is the causative agent and may remain in the tissues and cause pathology years after birth. One exmaple is the development of diabetes mellitus due to long-term. chronic viropathy in the islets of Langerhans of the Pancreas.

Abnnormalities commonly seen are deafness, growth deficiency, mental deficiency, cataracts, glaucoma. corneal opacity, strabismus, heart and blood vessel abnormalities. Occasionally kidney problems, late eruption of teeth, hypospadia, cryptorchidism, meningocele, diabetes mellitus, and hypopituitarism, or other problems may be noted.

The greatest risk of fetal infection occurs when the mother contracts rebella during the first trimester. Risks also exist when infection occurs during the second trimester, especially deafness, growth deficiency, mental deficiency, and peripheral pulmonic stenosis.

Prevention of maternal rubella by widespread administration of the attenuated rubella vaccine has made a significant impact on the reduction of this syndrome. However, in Iowa we have a number of persons with religious affiliations who do not believe in any immunizations. Two such groups are the Amish and Netherland Reformed groups. There may be other such groups. The Special Education Nurse will need to monitor such pupils during Rubella outbreaks. The pupils will have the blue "Certificate of Immunization Exemption" card in the immunization card file. Refer to the Iowa Department of Health, Immunization Section, if a rubella outbreak occurs.

DOWN SYNDROME

This syndrome, also known as Trisomy #21, was first described in 1866 and occurs more frequently than any other genetic error of development. It was not until 1959 that the genetic cause was understood and the wide variations of involvement were clarified. The basic defect is the presence of an extra chromosome, #21, which can occur by one of the following processes:

1. Non-disjunction, which takes place during the formation of sperm or ovum and results in an extra chromosome in the fertilized egg (95%).

2. Translocation, when the extra #21 chromosome is attached to another chromosome (4%).

3. Mosaicism, when the abnormal division of #21 chromosome takes place after conception. The extent of abnormalities depends on the time during growth of the fetus of the original defect and the percentage of abnormal or normal cells (1 to 2%).

The determination of the type of chromosomal abnormality should be encouraged to give as much information as possible about the potential for cognitive and motor development of the pupil.

Implications

Several health problems which are found in this population are deserving of special attention from the Special Education Nurse in order to assist teachers and other staff persons in developing the most appropriate program for each pupil. Some of the problems and their implications for educational programming are shown below.

Health Problem	Implications for Education
1. Decreased resistance to infection, especially respiratory.	Increased absences. Early training for nose-blowing, covering coughs, swallowing saliva, hand-washing.
2. Congenital defects of heart and/or GI tract.	Notification of parents of any strep infection of classmate or staff.
3. Muscular hypotonicity.	Early and on-going intervention for developing motor skills.
4. Eye problems	Early visual evaluation.
5. Mild to moderate obesity	Nutrition management and increased activity.

6.	Dryness of mucous membrane and skin.	Usual dermatological treatments and increased humidity in the classroom.
7.	Constipation.	Increased fluids and dietary fiber. Toileting program.
8.	Difficulties with teeth and gums.	Meticulous tooth brushing and monitored self-help care.
9.	Atlanto-axial joint instability.	Early identification and modification of physical activity and physical education program.

GUIDELINES FOR OBTAINING CERVICAL SPINE X-RAYS IN DOWN SYNDROME CHILDREN

The Special Olympic's requirement that all Down syndrome children have cervical x-rays prior to competing has sparked several questions. Should all Down children have x-rays? At what age? How often? What should be done if they are abnormal? This memo will suggest guidelines for the use of institutions and health care personnel involved with Down syndrome children. It must be noted, however, that these are only tentative guidelines, as sufficient information for firm guidelines is not yet available.

In 1964 a high incidence of atlanto-axial instability was noted in Down syndrome children. Atlanto-axial instability is an abnormally large movement between the 1st and 2nd cervical vertebrae. If this movement becomes sufficiently great, weakness or paralysis, and even death can occur due to pressure on the spinal cord. Weakness or paralysis usually develops slowly, but can occur rapidly after even a minor trauma. Ten to twenty percent of Down syndrome children have increased movement between the 1st and 2nd cervical vertebrae, but only a small number of these develop spinal cord injury. The following are our recommendations for evaluating this problem.

1. We recommend flexion and extension x-rays of the cervical spine at 5 to 6 years of age. Some children with normal x-rays before 5 and 6 years of age will develop instability later, although very few, if any, will develop instability after 6 or 7 years of age.

2. If the x-rays are normal, the child may engage in unrestricted activity. No further x-rays are routinely required. Routine yearly physcial examinations only are necessary.

3. If the x-rays show atlanto-axial instability, the child should be referred to a physician familiar with the treatment of Down syndrome children. In general, if there is no evidence of spinal cord compression, the child should be followed with yearly cervical spine x-rays and physical examination and restricted from activities that could result in sudden forced flexion of the neck, e.g., tumbling and diving. In some children, the instability will resolve over time. Other children may require some permanent, minor activity restriction. If signs of cord compression are present or the instability is extreme, surgical stabilization may be necessary.

4. For children older than 5 or 6 years who have never had x-rays we recommend the same cervical spine x-rays as for the younger children.

5. We feel that cervical spine evaluation should become a routine occurrence at the time of enrollment at schools and institutions that educate Down syndrome children.

Information from the medical staff of
University of Iowa Hospitals and Clinics
Department of Orthopaedics
Iowa City, IA 52242

References

Pueschel, S.M., Scola, F.H., Perry, C.D., and Pezzula, J.C. (1981). Atlanto-axial Instability in Children with Down Syndrome. Pediatrics Radial, 10: 129-132.

CYSTIC FIBROSIS

Cystic fibrosis is a very serious disease of childhood that affects many of the body's secreting glands in the intestines and pancreas, the lungs, and the salivary glands. These glands normally secrete a thin mucous, which in cystic fibrosis becomes thickened, or viscous. The thickening interferes with the normal function of the glands and is the main cause of the disorder's serious problems. As the disease progresses, cysts, or pockets of fluid, form behind the mucous-blocked passageways. The associated scarring of tissues (fibrosis) gives the disease its name.

Implications

The more common problems for a pupil with cystic fibrosis can be explained by showing the effects of the disease on various parts of the body.

1. Sweat glands. The sweat of cystic fibrosis children contains much more salt (sodium chloride) than normal. With increased sweating in hot weather or increased activity, these pupils must be monitored closely to avoid heat prostration.

2. Gastrointestinal tract. Because of the reduced amount of certain digestive enzymes that normally are excreted by the pancreas into the intestines, the child cannot digest his food properly and fails to gain weight. Another evidence of a digestive problem is the occurrence of numerous large, greasy stools. A dietary program to provide maximum nutrition should become a part of the pupil's health plan.

3. Respiratory system. Pupils with cystic fibrosis have a history of coughing and wheezing because of the thick, viscous mucous and pulmonary infections are frequent and often prolonged. If medical management includes postural drainage, this may need to be included in the IEP.

4. Cardio-vascular system. With decreased oxygen, an additional strain is put on the heart and the pupil's daily program must allow for alternate periods of activity and rest.

PHENYLKETONURIA (PKU)

PKU is caused by an inherited error of metabolism in which the lack of an enzyme results in an inability to convert the amino acid phenylalanine to tryosine. As proteins are ingested, the build-up of phenylalanine causes a toxicity which results in mental retardation, behavior problems, and other clinical features.

Since 1964, mass screenings of infants for the defect has become mandatory in most states so dietary management can be started immediately, and these children can grow and develop normally.

Responsibilities of the Special Education Nurse:

1. It is essential that all school personnel understand the importance of the phenylalanine-restricted diet to insure the pupils compliance with the crucial dietary treatment. The diet restriction must include any food which contains aspartave (Nutri-Sweet).

2. The Special Education Nurse should take responsibility for counseling teen-agers about the importance of adhering to the phenylalanine-restricted diet before and during a pregnancy to prevent mental retardation in her own off-spring.

3. Students with PKU may be photosensitive and subject to severe sunburn with minimal exposure. All staff should be aware of the necessity for protection of all exposed areas with an appropriate sunscreen any time pupils are outside.

References - In the appendix are lists of national organizations for specific genetic abnormalities which can provide resource materials.

OTHER DEVELOPMENTAL DISORDERS

CONVULSIVE DISORDER

The Special Education Nurse is encouraged to read texts listed in the reference section or to obtain literature from the Epilepsy Foundation for indepth information regarding convulsive disorders. Detailed here is the current International Classification of Epileptic Seizures, first aid for a Grand Mal seizure, information regarding anticonvulsant therapy, and suggested forms for documentation of seizures occurring in the school setting.

I. International Classification of Epileptic Seizures

A. Partial seizures that begin locally (focal)

1. Simple: motor, sensory, or autonomic

2. Complex: temporal lobe

3. Partial seizures that rapidly become generalized

B. Generalized seizures without local onset, bilaterally symmetrical

1. Absence, petit mal

2. Myoclonic jerks

3. Infantile spasms

4. Clonic

5. Tonic

6. Tonic-clonic

7. Atonic drop attacks (brief), atonic absence (longer)

8. Akinetic (loss of movement), usually in children

C. Unilateral (or mainly unilateral), usually in children

D. Undefined

II. Febrile Seizures

Up to five percent of children will have a febrile seizure. These generally occur between seven months and three years of age. They are rare after age five. They are characterized by generalized tonic-clonic movements that occur with a rapid rise in temperature. They have no focal features. If these occur in the school setting,

the nurses' primary concerns will be to decrease the child's temperature and make provision for the treatment of the underlying infection. This type of seizure might not stop without medical intervention.

In children with a history of febrile seizures, immunizations may have been postponed and/or given in fractional doses. (See position paper in section on Immunization.) The school staff will benefit from periodic inservices provided by the Special Education Nurse regarding seizure management.

A chart of clinical descriptions of seeizures follows:

INTERNATIONAL CLASSIFICATION OF SEIZURES

	Type	Duration	Seizure Symptoms	Postictal Symptoms
I. Partial Seizures (seizures beginning locally)				
1. Simple partial seizures with elementary symptomatology generally without impairment of consciousness. A. with motor symptoms B. with special sensory or somatosensory symptoms C. with autonomic symptoms D. compound forms	Simple Partial	30 seconds	Vary: --sudden jerking --sensory phenomena	No loss of
2. Complex partial seizures with complex symptomatology, generally with impairment of consciousness. A. with impairment of consciousness B. with cognitive symptomatology C. with affective symptomatology D. with psychosensory symptomatology E. with psychomotor symptomatology F. compound forms	Complex Partial	1-2 minutes	May have aura Staring Automatisms, i.e. lip-smacking, picking at clothes fumbling Unaware of environment May wander	Amnesia for seizure events. Mild to moderate confusion
3. Partial seizures secondarily generalized				
II. Generalized Seizures (bilaterally symmetrical without local onset)				
1. Tonic-clonic seizures	Generalized Tonic-clonic (grand mal)	1-2 minutes	A cry Fall Tonicity (rigidity) Clonicity (jerking) May have cyanosis	Amnesia for seizure events Confusion Deep sleep
2. Tonic seizures				
3. Clonic seizures				
4. Absence seizures	Absence (petit mal)	2-15 seconds	Stare Eyes fluttering	Amnesia for seizure events No confusion Able to resume activity
5. Atonic seizures				
6. Myoclonic-seizures bilaterally massive epileptic				
7. Infantile spasms				

III. First Aid for Epileptic Seizures

A major epileptic seizure is often dramatic and frightening but usually lasts only a few minutes. It does not require expert care. These simple procedures should be followed:

A. KEEP CALM. You cannot stop a seizure once it has started. Let the seizure run its course. Do not try to revive the person.

B. Ease the person to the floor and loosen his clothing.

C. Try to prevent them from striking their head or body against any hard, sharp, or hot objects, but do not interfere otherwise with their movement.

D. Turn their face to the side so that saliva can flow out of their mouth.

E. DO NOT INSERT ANYTHING BETWEEN THE PERSON'S TEETH.

F. Do not be frightened if the person having the seizure seems to stop breathing momentarily.

G. After the movements stop and the person is relaxed, he should be allowed to sleep or rest if he wishes.

H. It isn't generally necessary to call a doctor unless the attack is followed almost immediately by another seizure, or if the seizure lasts more than about ten minutes.

I. If the person is a child, the parents or guardians should be notified that a seizure has occurred.

J. After a seizure, many people can carry on as before. If after resting, the person seems groggy, confused, or weak, it may be better to accompany them home.

Courtesy of:
IOWA CHAPTER
EPILEPSY FOUNDATION OF AMERICA

IV. Anticonvulsant Medications

Special Education Nurses need to be knowledgeable about the anticonvulsant medications which students with seizure disorders are taking. Commonly used anticonvulsants, their recommended dosage, therapeutic blood levels, and adverse reactions are found in the following pages. Teachers need to be aware of side effects of anticonvulsants their students are taking so they can observe and report changes in behavior to the Special Education Nurse. The Special Education Nurse should determine if parents are aware of possible side effects and if therapeutic blood levels are being checked on a routine basis.

The following principles of anticonvulsive therapy should be considered:

A. Give medications at convenient times of the day. Try to avoid administration of drugs during school hours.

B. Frequency of administration is determined in part by the half-life of the drug. Dilantin and Zarontin can usually be given twice per day.

C. Start one drug at a time, initially in a therapeutic, but not high, dosage. Attempt to control seizures with a single drug whenever possible. Significant drug interactions are probably frequent.

D. Try to use the safest and least expensive drugs first. Considered to be high-risk for side effects are:

Mesantoin	Prednisone
Tridione	Tegretol
Phenurone	Depakene

E. Attempt to use tablets or capsules instead of liquid preparations whenever possible.

F. Advise parents or patient of the name of the drug, milligrams in each unit, daily dosage, and reasonably common adverse effects. Parents should know about the possibility of behavior abnormalities that can result from Phenobarbital.

G. Consider blood level determinations to aid in regulation of dosage regimen whenever indicated.

H. Discuss need for following blood levels and the need for tests to determine adverse reactions at specified time when anticonvulsant medications are started.

V. Medication Preparation

NAME	FORM	STRENGTH
Dilantin (diphenylhydantoin)	Tablets	50 mg. (Yellow triangle)
	Capsules	30, 100 mg.
	Suspension	30 mg./5 ml. (Pink)
		125 mg./5 ml. (Orange)
Phenobarbital	Tablets	15, 30, 65, 100 mg.
	Elixir	20 mg./5 ml. (Clear, Red)
Mysoline (primidone)	Capsules	50, 250 mg. (White)
	Suspension	250 mg./5 ml.
Zarontin (ethosuximide)	Capsules	250 mg.
	Syrup	250 mg./5 ml.
Diamox (acetazolamide)	Tablets	125, 250 mg.
	Capsules	500 mg. (sustained release)
Tegretol (carbamazepine)	Tablets	200 mg.
Clonopin (clonazepam)	Tablets	0.5, 1.0, 2.0 mg.
Tridione (trimethadione)	Capsules	300 mg.
	Tablets	150 mg.
	Solution	200 mg./5 ml.
Valium (diazepam)	Tablets	2, 5, 10 mg.
	Injectable	5 mg./ml.
Depakene (valporic acid)	Capsules	250 mg. (Orange)
	Syrup	250 mg./5 ml. (Red)
Nembutal suppositories		30, 60, 120, 200 mg.

Illustrations of specific drugs may be found in information from the Epilepsy Foundation or in the Physician's Desk Reference.

VI. Recommendations

To monitor adverse reactions of anticonvulsants, the following tests are recommended:

Dilantin -	CBC, urinalysis, at least every year.
Tegretol -	Initially, CBC with differential. One month after the drug has been started, CBC with differential. Then every 2 months.
Depakene -	CBC initially (not definitely established). SGOT (measures liver functioning) at the first and second month. If SGOT is normal, repeat every six months.
Phenobarbital, Mysoline, Clonapin -	CBC with differential initially, then every 12 months.
Zarontin -	CBC and urinalysis at start. Repeat CBC and urinalysis at two months following its start, and every six months.

Please Note: Any mixture of drugs may produce uncomfortable, even dangerous, results. The risk of this happening is avoided when people on anticonvulsant medications check with the physician before taking any other medicine including nonprescription preparations such as aspirin or antihistamines.

VII. Antiepileptic drugs commonly used for children

NAME	TREATED	DOSAGE	SIDE EFFECTS/ADVERSE REACTIONS
Dilantin (diphenylhydantoin)	Grand Mal (Major Motor) Psychomotor Focal cortical seizures	4-7 mg/kg/day Blood therapeutic level - 10-20 mcg/ml	Gingival hyperplasia, hirsutism, dermatitis, drowsiness, gastric distress, nystagmus, ataxia, dysarthria, blood dyscrasias
Phenobarbital	Grand Mal (Major Motor)	2-5 mg/kg/day Blood therapeutic level - 10-30 mcg/ml	Rash (Steven's Johnson syndrome), ataxia, hyperactivity, questionable effect on cognitive performance
Mysoline (primidone)	Grand Mal (Major Motor) Psychomotor	8-20 mg/kg/day Blood therapeutic level - 4-10 mcg/ml	Drowsiness, dizziness, abnormal behavior, ataxia, rash, blood dyscrasia, diplopia, nystagmus
Zarontin (ethosuximide)	Petit Mal	20-40 mg/kg/day Blood therapeutic level - 40-100 mcg/ml	Dizziness- GI distress: nausea, vomiting, anorexia, leukopenia, kidney dysfunction
Tegretol (carbamazepine)	Grand Mal Focal Psychomotor	8-15 mg/kg/day (adult, 600-1200 mg/day) Blood therapeutic level - 4-12 mcg/ml	Vomiting, headache, drowsiness, staggering, blood dyscrasia
Clonapin (clonazepam)	Petit Mal Minor Motor	Initial dose is 0.02 mg/kg/day; gradually increase to 0.08 to 0.2 mg/kg/day	Hyperactivity, short attention span, impulsive behavior, drowsiness, ataxia, vertigo or dizziness, confusion, excessive weight gain, drooling
Nembutal Suppositories	Grand Mal - Given rectally at onset of seizure activity	30-120 mg/rectum	Possible respiratory depression
Depakene (valporic acid)	Petit Mal, Grand Mal, mixed, akinetic -	15 mg/kg/day initially - maximum 30 mg/kg/day. Blood therapeutic level - 50-100 mcg/ml	Nausea, vomiting, drowsiness, incoordination, dizziness, diplopia, skin rash, possible effects on liver

VIII. Documentation of Seizures

Every attendance center should have an effective procedural plan for documentation of seizures which occur during school hours. Such documentation should always include communication of the information to the primary care-taker. Examples of seizure documentation forms follow.

Seizure Observation Form

Pupil _____ Time _____ A.M. _____ P.M. _____

Date _____ Duration _____Min _____Sec

ACTIVITY/BEHAVIOR IMMEDIATELY PRECEDING SEIZURE:

OBSERVATIONS DURING SEIZURE (Please Check Pertinent Information):

Jerking of: Arms ____ Stiffness of: Arms ____
Legs ____ (indiate right or left) Legs ____
Eye Movement: Fixed ____ Rapid Movement ____ Rolled Back ____
Skin Color: Flushed ____ Blue ____ Pale ____
Drooling ____ Yelling/Crying ____ Voiding ____ Soiling ____
Respiratory Difficulty: Breath Holding ____ How Long ____
Other Comments:

ACTIVITY/BEHAVIOR FOLLOWING SEIZURE:

Person(s) Reporting

_____ (signature)

_____ (signature)

Distribution: White - Home with pupil
Yellow - Special Education Nurse

SAMPLE

NAME OF PATIENT _____ PHYSICIAN'S NAME _____

	Date
	Time
	Duration (seconds or minutes)
	Activity prior to episode
	Character-istics (muscle movements of body parts, rolling of eyes
	Soils and/or voids
	Activity following episode
	c/o pain following
	Injuries noted
	Signature of individ-ual Documenting

Source: Epilepsy Affiliate Division Iowa Chapter
621 Ovid Avenue, Des Moines, IA 50313

SUGGESTIONS FOR AN I.E.P.: CONVULSIVE DISORDERS

GOAL 1: Develops self-directed management of seizure disorder as measured by decreased number of seizures, improved self-concept and improved school attendance.

SHORT TERM
OBJECTIVES

1.1 Follows prescribed schedule of medical supervision 100% of time as verified by parent/pupil/Special Education Nurse for 10 months.

1.2 Takes medication as prescribed 100% of time as verified by parent/pupil and Special Education nursing during school.

1.3 Follows prescribed physical activity regimen 100% of time as verified by parent/pupil and Special Education Nurse during school year.

1.4 Participates in __% of school's social and recreatinal activities as verified by teacher/parent/pupil and Special Education Nurse during school year.

1.5 Describes the dental care necessary if he/she is taking Dilantin with __% accuracy by (date).

GOAL 2: Knows that seizure disorders require continuous medical supervision and self-management as measured by a Special Education Nurse designed test.

SHORT TERM
OBJECTIVES

2.1 Describes the consequences of not following the treatment regimen with __% accuracy by (date).

2.2 Plans and describes an appropriate life-long exercise regimen with __% accuracy by (date).

2.3 Explains the procedures necessary to obtain a driver's license with __% accuracy by (date).

2.4 Follows referral to the Department of Vocational Rehabilitation for job evaluation and training and reports results to Special Education Nurse by (date).

2.5 Explains why it is necessary to inform all health practitioners of his/her seizure disorder before any medical/dental care is initiated with __% accuracy by (date).

2.6 Wears Medic-Alert identification bracelet 100% of time as verified by parent/pupil and Special Education Nurse during school year.

GOAL 3: Increases knowledge of the pathophysiology of the brain as it relates to seizure disorders as measured by Special Education Nurse designed test.

SHORT TERM
OBJECTIVES

3.1 Classifies type of his/her seizure disorder with __% accuracy by (date).

3.2 Describes symptoms of his/her disorder with ___% accuracy by (date). (Aura, seizure activity and post-ictal period).

3.3 Describes etiology of seizure disorders with ___% accuracy by (date). (Idiopathic, hereditary or genetic, nongenetic or acquired; organic: post-traumatic, post-hemorrhagic, post-anoxic, post-infectious, degenerative, congenital, parasitic brain disease, post-hypoglycemic injury; febrile: fevers generally over 104°F between ages of six months and five years).*

3.4 Defines terms associated with seizures with ___% accuracy by (date). (Aura, tonic, clonic, electro-encephalogram - EEG)

*Caution: May occur at lower temperature.

Reprinted with permission from:
Individualized and prescriptive school nursing services for physically handicapped students, 1980.
School Nurse Advocates
P.O. Drawer 1538
Garden Grove, CA 92640

References

Braham, R. "The dental implications of epilepsy." U.S. Department of Health, Education and Welfare Publication No. 78 - 5217.

Coughlin, M. (May/June, 1979). "Teaching children about their seizure and medications." MCN, pp. 161-162.

Norman, S. (May, 1981). AJN, pp. 984-1000.

Santelli, N. (March/April, 1981). "Screening for seizures." MCN.

Rossel, G., S. Tonelson, and C. Appolone (January, 1981). "Epilepsy workshop for public school personnel." Journal of School Health, pp. 48-50.

Stores, Gregory (1975). "Behavioral effects of anti-epileptic drugs." Developmental Medicine Child Neurology, 17, 647-658.

ATTENTION DEFICIT DISORDER

Attention Deficit Disorder (formerly called Minimal Brain Dysfunction) occurs frequently in the mentally retarded population, although it usually is found in pupils of normal intelligence. It can be present with or without an accompanying hyperactivity. Primary characteristics of the disorder are a short attention span, distractibility, impulsive behavior, inability to complete a task and difficulties with both gross and fine motor skills.

The Special Education Nurse, as a member of the educational team adds data to help in identifying the condition through neurodevelopmental screening and observation of the pupil in the classroom. The Conner's Rating Scales, both the parent and teacher questionnaires, help to achieve a more objective picture of behavior and should be used both before and after intervention is started to document the effectiveness of treatment.

The Special Education Nurse should monitor height and weight every 6 to 12 months for any pupil on psychotropic drugs and staff and parents should be informed of the possible side effects of the medications. These may include suppression of appetite, abdominal pain, changes in emotional status, and, rarely, a display of bizarre behaviors. The Special Education Nurse serves as a liaison between the school and pupil's physician to assure accurate monitoring of the medication and its effectiveness.

Abbott Laboratories provides forms for the Connor's Rating Scales which are included in this section. Ross Laboratories provides copies of the Standardized Growth Charts developed by the National Center for Health Statistics.

References

Levine, M., Brooks, R., Shonkoff. J. (1980). A Pediatric Approach to Learning Disorders , New York: John Wiley & Sons.

Roberts, M.J. and Canfield, M. (1980). "Behavior modification with a mentally retarded child," American Journal of Nursing.

Stewart, M.A., and Olds, S.W. (1973). Raising a Hyperactive Child. New York: Harper and Row Publishers.

Wender, P.H. (1973). The Hyperactive Child: A Handbook for Parents. New York: Crown Publishers, Inc.

AN INSTRUMENT FOR THE ASSESSMENT OF HYPERKINESIS IN CHILDREN

Parent and teacher rating forms are useful in the assessment of children diagnosed as hyperkinetic due to minimal brain dysfunction. While there is still a need for a great deal of further research in this area, the forms included here offer the virtues of reliability and drug-sensitivity (these forms have been used in extensive clinical trials involving nearly 1000 hyperkinetic children).

For maximum effectiveness, the child should be rated initially by both teacher and parent prior to beginning therapy. while not on any analeptic or psychoactive agent. These ratings then serve as baseline indicators of hyperkinetic activity prior to therapy. and progress may be evaluated by comparing these scores to those derived from later forms. Due to the variability between raters, it is important that all subsequent ratings be made by the individual who made the initial rating.

Both forms contain ten phrases describing specific traits which have been found to be of prime importance in the syndrome of hyperkinesis. These are hidden among the 28 (teacher) or 48 (parent) phrases on the form. These phrases are of necessity brief, and utilize non-technical terminology. The total score of these ten phrases on each form constitutes the Hyperkinesis Index. This index reflects the severity or degree of presence of hyperkinesis in the child as reflected by the observer.

Each of these traits is scored from 0 to 3 as follows: "Not At All" should be scored as 0, "Just A Little" as 1, "Pretty Much" as 2, and "Very Much" as 3. These ten phrases are as follows:

1. Excitable, impulsive.
2. Difficulty in learning.
3. Restless in the "squirmy" sense.
4. Restless, always up and on the go.
5. Fails to finish things.
6. Childish and immature.
7. Distractability or attention span a problem.
8. Easily frustrated in efforts.

*9. Mood changes quickly and drastically.

*10. Denies mistakes or blames others.

*11. Disturbs other children.

*12. Demands must be met immediately.

These appear in the parent and teacher rating forms as follows:

Parent Rating Form - 4, 10, 11, 13, 19*, 25. 30. 31. 33*, 37
Teacher Rating Form - 1, 3**, 7, 8**, 14, 15, 21, 22, 26, 28

*This item appears only on the Parent Rating Form.
**This item appears only on the Teacher Rating Form.

The Hyperkinesis Index is derived simply by totaling the scores of these ten items on each form. The numerical range of this Index is 0 to 30; a higher score indicating a greater degree of hyperkinetic activity as judged by parent or teacher. In previous studies, a total score of at least 36 points on the combined parent and teacher indices (with a teacher's score of at least 18 points) was necessary for a child's inclusion into the basic study group.

In practice, these forms have been found to be useful rating tools when completed at approximately three to six week intervals. It is suggested that shorter intervals be employed whenever the Hyperkinesis Index is used to assess the outcome of altered or newly introduced therapeutic regimens.

Parent's Questionnaire

Name of Child _____ Date _____

Please answer all questions. Beside *each* item below, indicate the degree of the problem by a check mark (✓)

	Not at all	Just a little	Pretty much	Very much
1. Picks at things (nails, fingers, hair, clothing).				
2. Sassy to grown-ups.				
3. Problems with making or keeping friends.				
4. Excitable, impulsive.				
5. Wants to run things.				
6. Sucks or chews (thumb; clothing; blankets).				
7. Cries easily or often.				
8. Carries a chip on his shoulder.				
9. Daydreams.				
10. Difficulty in learning.				
11. Restless in the "squirmy" sense.				
12. Fearful (of new situations; new people or places; going to school).				
13. Restless, always up and on the go.				
14. Destructive.				
15. Tells lies or stories that aren't true.				
16. Shy.				
17. Gets into more trouble than others same age.				
18. Speaks differently from others same age (baby talk; stuttering; hard to understand).				
19. Denies mistakes or blames others.				
20. Quarrelsome.				
21. Pouts and sulks.				
22. Steals.				
23. Disobedient or obeys but resentfully.				
24. Worries more than others (about being alone; illness or death).				
25. Fails to finish things.				
26. Feelings easily hurt.				
27. Bullies others.				
28. Unable to stop a repetitive activity.				
29. Cruel.				
30. Childish or immature (wants help he shouldn't need; clings; needs constant reassurance).				
31. Distractibility or attention span a problem.				
32. Headaches.				
33. Mood changes quickly and drastically.				
34. Doesn't like or doesn't follow rules or restrictions.				
35. Fights constantly.				
36. Doesn't get along well with brothers or sisters.				
37. Easily frustrated in efforts.				
38. Disturbs other children.				
39. Basically an unhappy child.				
40. Problems with eating (poor appetite; up between bites).				
41. Stomach aches.				
42. Problems with sleep (can't fall asleep; up too early; up in the night).				
43. Other aches and pains.				
44. Vomiting or nausea.				
45. Feels cheated in family circle.				
46. Boasts and brags.				
47. Lets self be pushed around.				
48. Bowel problems (frequently loose; irregular habits; constipation).				

Distributed by Abbott Laboratories, North Chicago, IL60064

97-2123-7 461

Printed in U.S.A.

Teacher's Questionnaire

Name of Child _____ **Grade** _____

Date of Evaluation _____

Please answer all questions. Beside *each* item, indicate the degree of the problem by a check mark (✓)

	Not at all	Just a little	Pretty much	Very much
1. Restless in the "squirmy" sense.				
2. Makes inappropriate noises when he shouldn't.				
3. Demands must be met immediately.				
4. Acts "smart" (impudent or sassy).				
5. Temper outbursts and unpredictable behavior.				
6. Overly sensitive to criticism.				
7. Distractibility or attention span a problem.				
8. Disturbs other children.				
9. Daydreams.				
10. Pouts and sulks.				
11. Mood changes quickly and drastically.				
12. Quarrelsome.				
13. Submissive attitude toward authority.				
14. Restless, always "up and on the go."				
15. Excitable, impulsive.				
16. Excessive demands for teacher's attention.				
17. Appears to be unaccepted by group.				
18. Appears to be easily led by other children.				
19. No sense of fair play.				
20. Appears to lack leadership.				
21. Fails to finish things that he starts.				
22. Childish and immature.				
23. Denies mistakes or blames others.				
24. Does not get along well with other children.				
25. Uncooperative with classmates.				
26. Easily frustrated in efforts.				
27. Uncooperative with teacher.				
28. Difficulty in learning.				

Distributed by Abbott Laboratories, North Chicago, IL60064

PSYCHOSOCIAL DWARFISM

Psychosocial dwarfism is a relatively new area of concern in the medical and educational field. There are six primary symptoms of the disorder. 1) retarded growth, usually below the third percentile, and immature appearance for age accompanied by significant cognitive and motor delays; 2) unusual relationship to food (present in over 85%) from voracious appetites to going for long periods without food resulting in abdominal distention; 3) unusual thirst with indiscriminant drinking; 4) pain insensitivity with or without self injury; 5) regressive behaviors; and 6) disturbed interpersonal relationships with indiscriminate affection.

Families have not been well studied and more data needs to be collected. Early information supports the following: maternal description is one of isolation, loneliness, frequent depression, low self esteem, anger, hopelessness and desperateness, and difficulty in assessing her own environment. Paternal description is one of physical or emotional absence from the home, sometimes alcoholic or abusive and not emotionally supportive of the family. The family is described as chaotic, disruptive, often filled with abuse and neglect in parents' background, rigid, controlling, and often in financial difficulty.

Birth order is significant with the middle child or child born closest to the first born or closely to the third born as the most likely candidate. Frequently the psychosocial dwarf becomes the scapegoat in conflict between the parents. The parents deny the child is smaller, set unrealistic expectations for the child, and often think the child is deliberately behaving in such a way as to spite the parents.

Interventions involve:

1. Further assessment. This includes more purposeful observation by the present classroom teacher and former teachers, peer contact evaluation, the development of an individual grid keeping accurate growth and development records, and observation of the child in the classroom as well as observation of interaction between the parents and the children.

2. Planning. A multidisciplinary approach is most effective. A greater level of assessment may fall to the psychologist, Special Education and/or Public Health Nurse, and the social worker. Anticipation of removal of the child from the home is very real and the following questions may be valuable for the nurse to ask in assessment and planning. 1) What is the safety and well being of the child if not removed? 2) What is the family's capacity to change? 3) Are there sufficient resources in the family and community to implement the necessary changes?

3. Implementation. This involves coordination of the multidisciplinary group and the organization of documentation.

Treatment is aimed at prevention and the promotion of wellness. Improving family information and understanding of normal developmental milestones, improving the quality of home environments, as well as assessing reasonable expectations of behavior are important. Programs for screening of high risk children can be initiated. Questions in screening programs may include the following:

1. What is the level of parent's knowledge of growth and development?

2. What is the teacher's expectation of behavior?

3. What is the parents' expectation of behavior?

4. What families are of highest risk?

5. What physical assessments should be done--how often? by whom?

Krezor's book, "Diet and Nutrition" has a chapter on Psychosocial Dwarfism which explains the physical and physiological changes which result from the poor nourishment and its affect on the pituitary gland.

It has been found that once the conditions improve for this child, either through removal form the home or accepted parental responsibility for the child, the child begins to catch up on growth and development, although never completely. According to authorities, first the weight improves, then the stature, and finally the head circumference. These improvements in themselves can confirm the accuracy of the diagnosis.

Information from a presentation at the meeting of Iowa Special Education Nurse Organization, Spring 1985. by Rojann Alpers, Faculty of the University of Iowa College of Nursing.

NUTRITIONAL DISORDERS

The nutritional needs of the developmentally disabled pupil often differ markedly from those of normal pupils. Hyperactivity, cerebral palsy, or high muscle tone may require increased caloric intake due to excessive energy expenditure. The pupil who is immobile or has low muscle tone may require fewer calories to maintain body weight and may be at risk for obesity. Allergies, medication, family or cultural requirements may necessitate changes in dietary intake.

Common parental and professional concerns relating to handicapped pupil's nutrition may include:

1. Slow growth in length and lack of appropriate weight gain.
2. Excessive weight gain in relation to gains in length.
3. Refusal of the child to consume specific foods and/or groups of food.
4. Bizarre feeding patterns such as pica.
5. Lack of appetite or excessive appetite.
6. Gagging, vomiting, or rumination.
7. Food allergies, constipation, obesity, or anemia.
8. Abnormal motor patterns that affect a child's ability to consume food.
9. Inability or unwillingness of the child to finger feed and/or to self-feed.
10. Limited attention span or disruptive behavior at mealtime.

Palmer and Ekvall suggest that a detailed nutritional assessment would be in order if a child is suspcted of or exhibits any of the following:

1. Two standard deviations above or below the mean weight for age on a standard scale.
2. Mechanical feeding difficulties, or neuromotor dysfunction, e.g., problems in sucking, swallowing, and chewing.
3. Feeding skills below those anticipated for the developmental level of mental age.
4. Unusual food habits, e.g.. pica or food faddism.
5. A twenty-four hour dietary recall indicating an inadequate or imbalanced dietary intake.

6. Nutritional management required as with inborn errors of metabolism, malabsorption, allergy, or metabolic disorder.

7. Unusual body odor.

8. Overt physicial signs of nutritional deficiency. e.g. anemia.

9. Emotional disturbances and associated feeding problems, as in autism or anorexia nervosa.

10. In a high risk category, e.g.. taking stimulant or anticonvulsive drugs, coming from a very poor family, living in very poor housing.

The Special Education Nurse is referred to the excellent reference regarding nutrition by Palmer and Ekvall listed in the reference section.

The Nutrition Division of the Iowa State Health Department supplies a newsletter and serves as a resource. University of Iowa Hospital School conducts a monthly weight management clinic. The drug companies (Mead Johnson, Ross Labs, etc.) supply good materials on nutrition. Local sales representatives can assist in obtaining these.

The Special Education Nurse may be involved in modifying the school lunches for pupils with diabetes or those on a weight management program. Some suggestions for developing IEPs for these pupils follow in addition to a form for a dietary evaluation.

Two references have been developed which give nutritional information helpful to students and parents. Fast Food Facts gives food values of items from fast-food restaurants. Convenience Food Facts gives food values for prepared foods. These can be ordered from International Diabetes Center. Park Nicollet Medical Foundation, 5000 West 39th Street, Minneapolis, Minnesota 55416 (612/927-3393).

DIETARY EVALUATION

Name_____ Date_____

DOB: _____

Food Intake (24 hour Recall)

Patterns

Time: _____

Where: _____

With Whom: _____

BREAKFAST	Amt.
Fruit	
Meat	
Egg	
Bread	
Fat	
Cereal	
Sweetner	
Milk	
Fruit Juice	
Other	

LUNCH	Amt.
Meat	
Veg.	
Bread	
Fat	
Fruit	
Milk	
Beverage	
Other	

DINNER	Amt.
Meat	
Meat Subst	
Potato	
Vegetable	
cooked	
Raw	
Salad	
Dressing	
Bread	
Fat	
Sauce/gravy	
Fruit	
Milk	
Beverage	
Dessert	
Other	

BETWEEN MEALS	Amt.
Time: _____	

Vitamin and Mineral supplement_____

Amount - frequency _____

Iodized salt _____ Source of flouride_____

Food Summary

Dairy Products	Daily Servings	Total Servings
Milk		
Cheeses		( )
Other		

Meat Group		
Meat-Fish-Poultry		
Legumes		( )
Peanut butter		
Egg		

Vegetable & Fruit		
Potato		
Green/Yellow Veg		
Other Veg.		( )
Citrus fruits		
Other fruits		

Bread/Cereal		
Bread		
Cereal		( )
Rice		
Pasta		

Score _____

Others:

Candy _____
Pop _____
Chips,etc_____
Desserts_____
Fat _____
Wafer _____

15=adequate
12=borderline
10=Do 3 day int...

Appetite_____

Self-feeds____Assisted___Dependent___

Special diet_____

Food allergies_____

Foods regularly omitted_____

Favorite foods_____

Illness_____

Religious or ethnic factors_____

Economic status_____

Food stamps_____

What foods do you believe are good for children_____

Screened by_____

CLINICAL ASSESSMENT

Clinical assessment is the use of two parameters, physical signs and anthropometric measurements, to detect nutritional deficiences and excesses. Anthropometric measurements may suggest malnutrition at an earlier stage than physical signs which often do not appear until malnutrition has been prolonged and severe.

Physical Signs. Physical signs are considered to be of value in nutrition assessment and are usually associated with a nutritional deficiency, although nutritional excesses may also be seen. Signs of malnutrition may often be mixed and may be due to the deficiency or excess of two or more micronutrients. Any physical finding that suggests a nutritional abnormality should be considered a clue rather than a diagnosis and should be pursued further with laboratory and dietary studies.

Table #1 shows physical signs indicative or suggestive of malnutrition.

TABLE 1 - PHYSICAL SIGNS SUGGESTIVE OF MALNUTRITION

Body Area	Signs Associated with Malnutrition	Possible Causes
Hair	Lack of natural shine, hair dull and dry; thin and sparse; color changes (flag sign); can be easily plucked.	Protein-calorie (P-C) deficiency; or of other nutrients
Face	Skin color loss; skin dark over cheeks and eyes.	P-C deficiency; deficiency of B complex vitamins
	Moon face; enlarged parotid glands	P-C deficiency
	Scaling of skin around nostrils	Niacin, riboflavin, pyridoxine deficiency
Eyes	Small, yellowish lumps around eyes (xanthelasma); white rings around both eyes (corneal arcus)	Hyperlipidemia
	Eye membranes pale (pale conjunctivae)	B_{12}, folic acid, or iron deficiency
	Xerophthalmia; 1) night blindess 2) dryness of eye membranes (conjuctival xerosis); 3) dull appearing or soft cornea (corneal xerosis)	Vitamin A deficiency
	Redness of membranes (conjunctival injection); ring of fine blood vessels around cornea (circum-corneal injection) Bitot's spots	General poor nutrition

Body Area	Signs Associated with Malnutrition	Possible Causes
Eyes (cont)	Redness and fissuring of eyelid corners (angular palpebritis)	Niacin and riboflavin deficiency
Lips	Redness and swelling of mouth or lips (cheilosis); especially corners of mouth (angular fissures and scars)	Niacin, riboflavin deficiency
Tongue	Swelling, scarlet and raw tongue; smooth tongue; swollen sores; hyperenic and hypertrophic papillae; atrophic papillae	Folic acid, niacin riboflavin, vit. pyridoxine, iron and/or zinc deficiency
	Magenta (purplish color) tongue	Riboflavin deficiency
Teeth	Teeth may be missing or erupting abnormally	General poor nutrition
	Caries	Excessive intake of highly refined carbohydrates; general poor nutrition
	Gray or white spots (fluorosis)	Excessive flouride intake
Glands	Thyroid enlargement	Iodine deficiency or toxicity
	Parotid enlagement	General poor nutrition
	Hypogonadism	Zinc deficiency
Skin	Small or large tumors around joints of hands, legs or skin (xanthoma)	Hyperlipidemia
	Dryness of skin (xerosis); sandpaper feel of skin (follicular hyperkeratosis) flakiness of skin	Vitamin A deficiency or excess; essential fatty acid deficiency, P-C deficiency
	Black and blue marks due to skin bleeding (petechiae)	Vitamin C and/or K deficiency
	Skin swollen and dark; red swollen pigmentation of exposed areas (pellagrous dermatosis)	Niacin deficiency
	Lack of fat under skin	P-C deficiency
	Yellow colored skin	Carotene toxicity

Body Area	Signs Associated with Malnutrition	Possible Causes
Skin (cont)	Hyperpigmentation	Multiple vitamin deficiencies
	Cutaneous flushing	Niacin toxicity
Nails	Nails spoon shaped (koilonychial)	Iron deficiency
Cardio-vascular System	Tachycardia (greater than 100); enlarged heart	Thiamine deficiency
	Elevated blood pressure	Excessive sodium intake
	Coronary heart disease	Excessive cholesterol, fat and/or caloric intake
Nervous System	Listlessness	P-C deficiency
	Loss of position and vibratory sense; decrease and loss of ankle and knee reflexes	Vitamin B^{12} and thiamin deficiency
Muscular & Skeletal Systems	Muscle weakness	Phosphorus deficiency
	Muscles have "wasted" appearance	P-C Deficiency
	Baby's skull bones are thin and soft round swelling of front and side of head (frontal and parietal bossing); baby's soft spot on head does not harden (persistently open anterior fontanelle); small bumps on both sides of chest wall (ribs); bowed legs; swelling of ends of bones (epiphysial swelling)	Vitamin D and calcium deficiency
	Muscalar-skeletal hemorrhages Pseudo-paralysis	Vitamin C deficiency
	Calf tenderness	Thiamin deficiency
	Bilateral edema of lower extremities	Protein deficiency
	Demineralization of bone-osteoporosis	Calcium deficiency
Gastro-intestinal System	Liver enlargement	Protein deficiency
	Liver and spleen enlargement	Hyperlipidemia
	Gastritis	Niacin deficiency
	Anorexia, nausea	Magnesium deficiency
	Nausea and vomiting	Vitamin A Toxicity
General	Growth failure	P-C deficiency Zinc deficiency

FEEDING STUDENT WHO REQUIRES ASSISTANCE

I. General Guidelines

A. The procedures outlined here are for students who are able to take nutrients by mouth, but because of disabilities, are not able to take adequate amounts without assistance.

B. Preventative Measures

1. Amount of food per bite and speed of eating should be dictated by the students' preferences and abilities.

2. Hot foods should be fed while still hot (be certain not too hot); and cold foods, cold.

3. If possible, be certain food is of the right consistency for person to chew; if the person is unable to chew, use soft foods.

4. Be aware of any food allergies the student may have.

II. Feeding

A. Purpose

1. To supply nutrients to those students who are unable to eat without assistance and to provide training in appropriate eating skills.

B.. Preparation of Students

1. Place student in sitting position unless it is not recommended.

2. Clean student's hands and face if necessary.

3. Inform student of food being served if he or she is able to understand.

4. Place covering on student's chest to protect clothing.

C. Personnel Recommendations

The procedure for feeding a student who needs assistance, which follows, may be performed by qualified designated school personnel under indirect supervision.

D. Procedure

Essential Steps	Key points and precautions
1. Cut food in small bite size pieces unless its texture does not require it.	Do not feed too fast.
2. Carry food to student's mouth but have the student participate in the procedure as much as possible.	Be certain student is swallowing food.
3. Offer liquids throughout the feeding.	Amount of food per bite and speed of eating should be dictated by the student's preferences and abilities.
4. Record amount of food eaten.	
5. Reposition student to comfortable position.	Student should be encouraged to drink all liquids.
6. Record procedure on daily log.	

References

Kruger. Ingeborg, Pediatric disorders of feeding, nutrition & metabolism

HEALTH PROBLEMS

HIGH INCIDENCE HEALTH CONDITIONS

The pupil with physical handicaps and moderate to severe mental retardation may be more prone to seizures, infections, and the sequela of immobility.

The subject of seizures has been addressed in the section on handicapping conditions of this manual under Convulsive Disorders. The incidence of upper respiratory infections and otitis media is high for all age groups but particularly for the preschooler and the pupil with Down Syndrome.

The problems of immobility include skin breakdown, contractures, lung congestion, constipation (or diarrhea). The pupil with cerebral palsy may have difficulty with chewing and swallowing which compromises intake of both food and fluids and may significantly affect growth and development. The pupil with Down, Hurlers, or Prader-Willi syndrome may easily become obese and the diet must be closely monitored at school and at home. Another potentially serious problem is that of decreased fluid intake and the resultant dangers of dehydration.

Sample copies of treatment modalities will be found in this section for constipation, dehydration, otitis media, and colds which will be helpful to staff and may be given to parents.

Helpful discussions of usual childhood health problems may be found in the references which are listed in a separate section of this manual.

CONSTIPATION

Constipation is a common problem in children. Because infants and young children with developmental disabilities may not be as physically active as other children, they are more prone to becoming constipated. Certain medications and feeding difficulties may also predispose these children to constipation.

What is Constipation?

Constipation means hard, rock-like bowel movements. If stools are infrequent but soft, it is not constipation. Constipation should be prevented because it can cause abdominal discomfort, decreased appetite and irritability. Pushing to pass the hard stool may cause hemmorhoids, fissures (cracks around the anus which may bleed) and rarely rectal prolapse (bowel tissue forced out through the anus). If constipation becomes severe, stool may become impacted (intestinal obstruction) causing a medical emergency which requires special medical, and sometimes surgical, correction.

How Do I Treat Constipation?

There are a variety of ways to treat and/or prevent constipation in infants and young children. One should always try dietary methods of treatment before using medications.

Dietary Treatment

1. EXTRA FLUIDS

Offer your child water or juices between feedings. The young child should also be offered fluids frequently throughout the day. A small amount of prune juice on a daily basis may prevent constipation as it acts as a natural laxative. Prune juice may taste better if mixed with another juice such as apple, apricot, or cranberry. Prune juice may also be frozen to make popsicles which many children find fun to eat.

2. HIGH FIBER FOODS

Fiber makes the stool softer and easier to pass. However, it is crucial to provide increased fluid when adding fiber to the diet.

Infant: If your baby is eating solids, offer daily servings of fruits and vegetables. Strained prunes (up to 3 T. a day) especially may be helpful.

Young child: High fiber foods include raw and cooked fruits and vegetables, especially those with the peel left on such as plums, prunes, raisins, apricots, peaches, and potatoes with skin. Whole grain breads and cereals are also helpful. Whole wheat bread can be used instead of white bread. If your child dislikes bran cereal, try bran muffins, or

blend bran cereal in a blender or food processor and add to your child's regular cereal.

3. KARO SYRUP

For infants, add 1-2 tsp. of dark Karo syrup to each 4 oz. of formula or milk.

4. LIMIT FOODS HIGH IN FAT

Foods high in fat may be constipating. Limit the amount given of these foods including milk, cheese, and ice cream. Never give more than 1 quart (32 oz.) of milk or formula a day unless specifically recommended by your physician.

Medications:

1. STOOL SOFTENERS

If dietary management of constipation has been unsuccessful. check with your physician about using a stool softener. Stool softeners are safe for use with infants and young children and are available in drugstores without a prescription. These should be given on a regular basis (every day or every other day) to keep stools soft.

2. RECTAL LAXATIVES OR SUPPOSITORIES

Some children may need additional assistance with evacuation of stool. This may require the use of a rectal laxative or suppository if recommended by your physician.

3. ENEMAS

Enemas should never be given to an infant or child without the recommendation of a physician. Too many enemas may disturb the chemical balance in a child's system. Children may also become dependent on enemas in order to have a bowel movement.

When Should I Seek Medical Attention?

Contact your doctor if:

1. The above treatment steps have been unsuccessful.
2. Your child has not had a bowel movement in 5 days.
3. Your child's abdomen is hard and distended (bulging).
4. There is blood or mucus in the stool.

What is Dehydration?

Infants and young children are more prone to becoming dehydrated than adults. Dehydration means an abnormal decrease in the body's fluid volume. In other words, when a person loses more water from his body than he takes in, dehydration occurs. Severe dehydration causes chemical imbalance inside the body which may result in death.

Children can easily become dehydrated when they are ill because they lose body water through vomiting, diarrhea, and fever. Children with developmental disabilities are especially at risk for dehydration because they are often smaller than other children, may have difficulty sucking or swallowing fluids, or may refuse to drink when they are ill.

How Can I Tell if My Child is Dehydrated?

The following may be signs of dehydration:

weight loss
pale dry skin
dry mouth
lack of tears
decreased urination (less than 4 wet diapers a day)
irritability or drowsiness

Contact your physician if you notice these signs and your child will not drink.

How is Dehydration Treated?

1. EXTRA FLUIDS

The following are the optimal daily fluid requirements for children:

3 months	25-30 oz./day or 2-2 1/2 oz./lb./day
6 months	32-38 oz./day or 2 oz./lb./day
9 months	36-41 oz./day or 2 oz./lb./day
12 months	38-43 oz./day or 1 1/2-2 oz./lb./day
2 years	45-49 oz./day or 1 1/2-2 oz./lb./day
4 years	53-58 oz./day or 1 1/2 oz./lb./day

(Fluid includes milk or formula, juice, water, Kool-Aid, soda pop, and fluids mixed with solid food.)

If your child is ill. he or she will require more fluids to prevent dehydration. Try the following suggestions to increase fluid intake:

a. Give small. frequent sips of water or juice
b. Offer jello or jello water
c. Offer popsicles
d. Make slushes with crushed ice and juice
e. An electrolyte solution may be given when prescribed by your physician
f. Try using a syringe, spoon, medicine dropper. straw or straw bottle to give liquids.

2. TUBE FEEDINGS

If your child cannot take an adequate amount of fluids by mouth, tube feedings may be required.

Nasogastric tube (NG tube): This tube is placed through the nose, down the esophagus, and into the stomach. It is usually used for temporary replacement of fluids. The tube may be taped in place and changed every few days, or a new tube may be inserted for each feeding. Parents can be taught to put the tube in themselves.

Gastrostomy tube: This tube is used when a child is chronically dehydrated or has difficulty taking fluids by mouth over a long period of time. Children who have difficulty sucking or swallowing may benefit from this type of tube. The gastrostomy tube goes directly through the abdominal wall into the stomach, and is put in by a surgeon. The tube is stitched into place but can be easily removed when it is no longer needed.

3. HOSPITALIZATION

Hospitalization may be necessary if your child becomes dehydrated. Tube feedings may be needed, and your child may need to have an IV to replace fluid losses. Blood and urine tests will help to determine the type and extent of the dehydration.

COLDS

Colds are caused by a virus which is the smallest of all germs. Viruses are usually not affected by antibiotic therapy. During the first year of life, it is not uncommon for a child to get 6-10 colds! There are things that can be done to help the cold symptoms.

1. Encourage clear liquids, like water, apple juice, chicken soup. If your child is under 6 months of age, contact the physician before doing this.

2. Use a vaporizer or humidifier to put moisture in the air. Be certain you keep the varorizer clean. Wash it with hot soapy water every other day. Be absolutely sure that the vaporizer is out of the child's reach.

3. If the child is congested in the nose. put two drops of salt water into one nostril. Then use a bulb syringe to draw it out. Then repeat on the other nostril. To make salt water use 1/4 teaspoon salt in 1 cup of water.

4. Put the head of the bed higher than the foot of the bed.

   a. Use 2 or 3 pillows with an older child.
   b. Put slats of crib higher on one end than the other. or
   c. Put books under one end of the bed.

5. If child is unable to sleep or eat well. even with doing the things above. check with your physician about giving a decongestant or cough suppressant.

6. Consult with your physician about giving medication for fever.

7. If these things do not work, or if your child seems increasingly ill, call your physician.

OTITIS MEDIA

Otitis media is an infection of the middle ear which occurs most often in children under six. This usually develops after a cold or sore throat when air is displaced with pus and fluid. Without treatment, pressure can build to the point of rupturing the tympanic membrane and the infection may spread to other ares. With any indication of ear infections, it is important to get prompt medical attention and follow instructions carefully. Compliance with the prescribed treatment regimen and proper follow-up evaluations should be encouraged and monitored by the Special Education Nurse.

SCREENING
AND
HEALTH ASSESSMENT

SCREENING PROGRAMS

The Special Education Nurse will be involved in various screenings and assessments regardless of the nurse's setting. Some of the screenings may include, but are not limited to:

Vision
Height and Weight
Dental
Hearing
Blood Pressure
Scoliosis
Communicable Disease

Guidelines for Screening Programs

1. Criteria for selecting whom to screen.

   a. Known incidence in a given group
   b. Importance of early identification - better remediation - less complications
   c. Events that may predispose certain group to increased risk

2. Criteria for screening procedures.

   a. Approved by those professionals who will do the evaluation of children with potential problems
   b. Type of equipment identified
   c. Training program for screeners
   d. Frequency of screening
   e. Criteria for referral for professional evaluation

3. Procedures for notifying parents of screening results and for follow-up.

4. Approval of district Board of Education if this is a newly implemented program.

5. Identification of available professionals for evaluation of high risk children identified.

6. Financial resources available for those children whose families cannot assume the cost of professional evaluation.

HEIGHT AND WEIGHT

Measuring height and weight has been routine for the school nurse but the past few years have brought an increase in the basic understanding of the growth process.

The hypothalmus in the brain controls the release of the growth hormone which acts on the kidneys and liver to release protein. The resulting process of normal growth causes an increse in length. volume, and weight of the body. However, faulty functioning of the hypothalmus, pituitary, liver, kidney, or bone can be a contributing factor in the short stature syndrome or other growth abnormalities. Other factors affecting growth may abe genetic, pre-natal, endocrine, nutritional, or environmental influences.

Normal growth rate is at least 5 cm per year before the growth spurt during adolescence. A pupil with a growth rate of 3-5 cm needs to have height and weight re-assessed more frequently. A pupil who is growing at a rate of 2.5 cm or less needs referral for further evaluation. A pupil who is below the 5th percentile and has a slow growth rate also needs to be monitored closely, with possible referral.

The charts developed by the National Center for Health Services, available through Ross Laboratories, are helpful for monitoring the growth curve of individual pupils.

BLOOD PRESSURE

The American Heart Association has encouraged monitoring of blood pressures of school age children for early detection of hypertensive tendencies. Blood pressure readings should be a part of each pupil's health record. The following charts can be used by the Special Education Nurse to determine percentile measurements and monitor pupils at risk. Health education should include information about the risks of hypertension and its causes and encouragement of a life-style to minimize the risks.

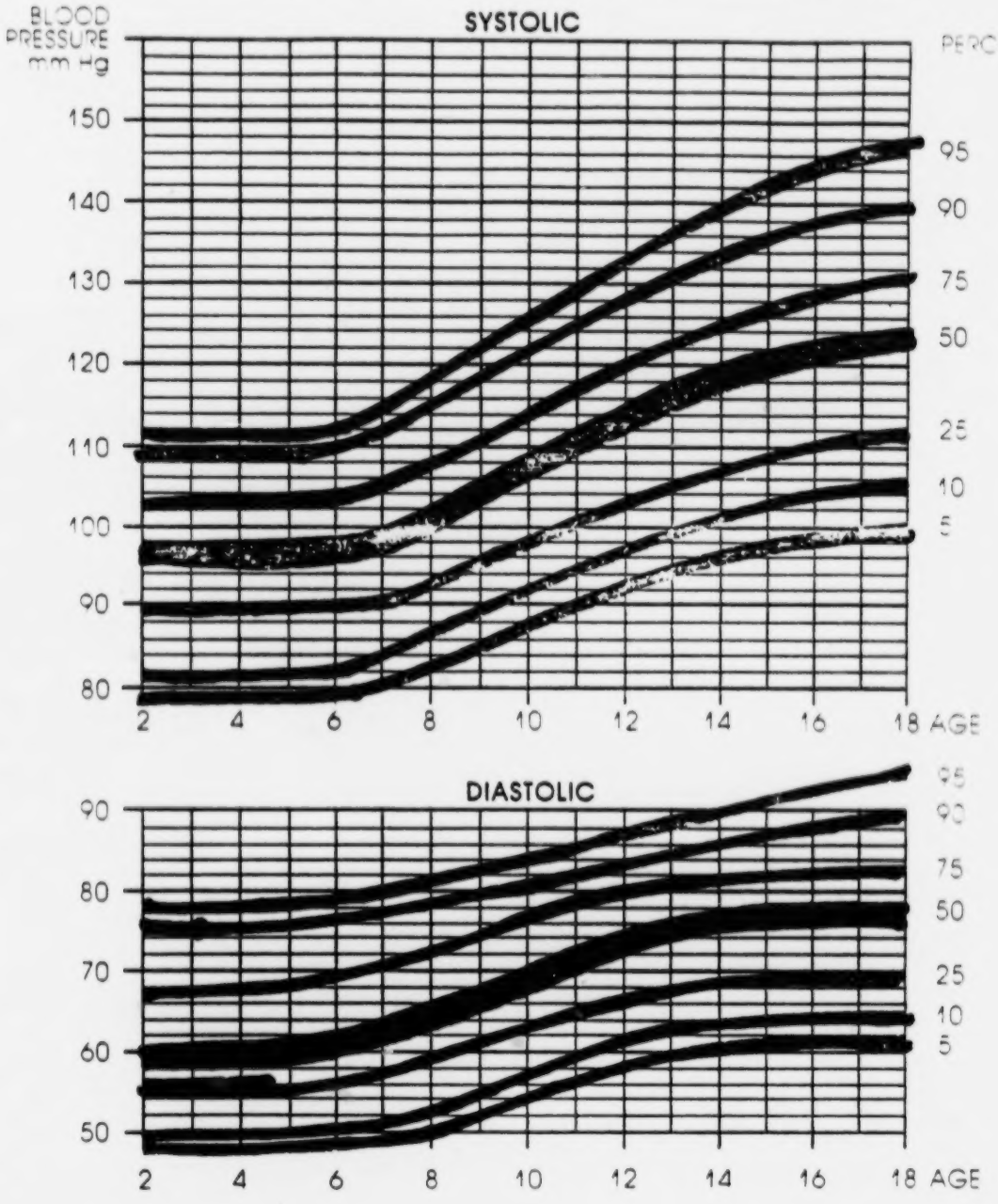
When taking blood pressure readings, it is important to have a cuff of the correct size available. Significant inaccuracies due to inappropriate cuff size can cause unnecessary concern or dangerous complacency and should be avoided with the use of proper equipment. Notations should always be made of which arm was used and whether the pupil was seated or lying down.

Name _____

Date of Birth _____

GIRLS
(right arm, seated)

PERCENTILES OF BLOOD PRESSURE MEASUREMENT



Blood pressure measurement percentiles prepared by the National Heart, Lung, and Blood Institute's Task Force on Blood Pressure Control in Children. (Supplement) Vol. 59, No. 5 Part 2, May, 1977

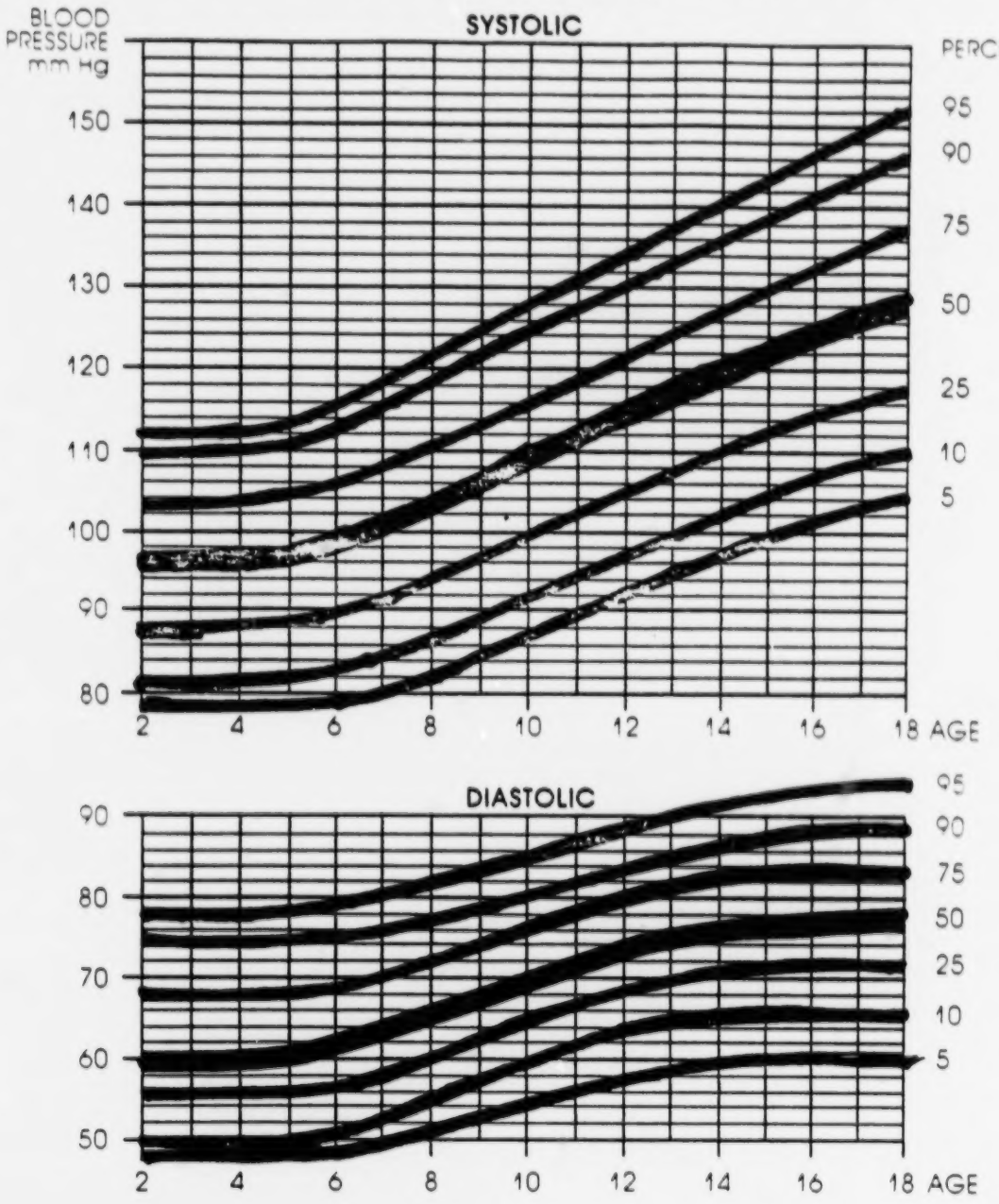
"Because it does not follow that a single high pressure is an abnormal finding, the charts are not intended for use in assessment of an individual child's blood pressure at a single point in time but rather for the plotting of pressures during growth and maturation . . . a single elevated measurement (i.e., greater than the 95th percentile) in an apparently healthy child does not necessarily reflect disease; it is necessary to repeat these measurements over time to obtain a trend."

Name _____

Date of Birth _____

BOYS
(right arm, seated)

PERCENTILES OF BLOOD PRESSURE MEASUREMENT



Blood pressure measurement percentiles prepared by the National Heart, Lung, and Blood Institute's Task Force on Blood Pressure Control in Children. (Supplement) Vol. 59, No. 5 Part 2, May, 1977

"Because it does not follow that a single high pressure is an abnormal finding, the charts are not intended for use in assessment of an individual child's blood pressure at a single point in time but rather for the plotting of pressures during growth and maturation . . . a single elevated measurement (i.e., greater than the 95th percentile) in an apparently healthy child does not necessarily reflect disease; it is necessary to repeat these measurements over time to obtain a trend."

SCOLIOSIS

Refer to the School Nurse Manual for information on screening procedures. This section will discuss three types of scoliosis--idiopathic, congenital, and neuromuscular.

Idiopathic scoliosis is divided into three forms: infantile, juvenile, and adolescent. The infantile form (birth to 3 years of age) is more common in males and in children with low birth weight and muscle disorders. It generally has a poor prognosis. The juvenile form (4 to 10 years of age) is more equally distributed between the sexes. The severity of the curve increases with growth. The adolescent form (age 10 years to skeletal maturity) is predominant in females with a ratio of 7 to 1. Juvenile and adolescent scoliosis in a male should be carefully investigated. Accompanying cafe'-au-lait spots should be checked for. This cause of idiopathic scoliosis is unknown, but it has a genetic component. All members of a family should be examined if one is diagnosed with scoliosis. Special attention should be paid to offspring of individuals with scoliosis. In about 85% of cases, idiopathic scoliosis disappears on its own. In the remaining 15%, the curve may become worse and lead to severe deformity.

In congenital scoliosis, the vertebrae are abnormally developed. This needs to be confirmed by x-ray. This type of scoliosis requires close follow-up. If the defect is progressive, it may require surgery. Congenital scoliosis, due to an absence of vertebrae or fusion of several vertebrae, is often associated with congenital anomalies of other organ systems within the same segmental level, particularly involving the genitourinary tract and heart.

Neuromuscular scoliosis occurs as a result of neuromuscular disease. Conditions which are characterized by abnormal muscle tone (as cerebral palsy) cause the child to sit or stand with the spine out of alignment, resulting in curvature. In neuromuscular scoliosis attention needs to be directed to the underlying disease. Treatment includes positioning, bracing, and sometimes surgery.

References

Blackman, J. (1984). Medical aspects of developmental disabilities in children birth to three. Gaithersburg, MD: Aspen Systems Corp.

Nelson's textbook of pediatrics (1979). Philadelphia: W.B. Saunders Company.

Weiner, H.L., et al. (1978). Pediatric neurology for the house officer.

Whaley. L.F. and Wong, D.L. (1979). Nursing care of infants and children. St. Louis: C.V. Mosby Company.

HEALTH ASSESSMENT

HEALTH ASSESSMENT

Health assessment of the child with disabilities is conducted for several reasons:

1. To determine the child's health status

2. To identify any neurological sign which might be indicative of specific learning disabilities

3. To clarify the child's strengths as the basis for future planning

4. To develop a physical and mental health maintenance plan for the child

It is important that the child with disabilities maintain optimum health status for two major reasons:

1. To insure that the child's limited energy reserves are not consumed in handling a physical health problem; for instance, a child with fever blisters (herpes simplex) may be distracted from learning because of the initial pain associated with these lesions.

2. To insure that the child's school attendance can be as regular as possible for optimum learning.

The assessment of health status may consist of data from information gathered from several sources:

1. Health history

   a. General information
   b. Specific information suspected to be indicative of special problems

2. Observation of the child

3. Physical assessment and review of systems

4. Neurological assessment

5. Reports from laboratory and other tests

The following guide indicates some information which should be elicited from the primary caretaker or from the nurse's examination of the pupil.

The chart which follows shows some examples of abnormal findings and the implications these might have on the pupil's educational programming.

Several forms are included in this section as samples only Each AEA or LEA can develop forms which are most functional for each situation.

HEALTH ASSESSMENT GUIDE

At-Risk or Disabled Children

Child's Name:
Chronological Age:
Adjusted Age:
Developmental Level:
Date of Assessment:
Diagnosis(es):

I. BIRTH HISTORY

Problems during pregnancy. labor, and delivery; gestation, Apgar scores, birth weight, neonatal problems, age at discharge.

II. INTERVAL MEDICAL HISTORY

Illnesses, hospitalization, accidents.

III. CURRENT CONCERNS. WORRIES, REGARDING CHILD'S HEALTH

IV. GROWTH (plot on growth chart)

Length, weight, head circumference.

V. NUTRITION/FEEDING

Method (breast, bottle, cup, NG. gatrostomy, etc.); type of food; amounts; iron source; fluoride; feeding schedule; duration of feeding; position (high chair. parent's lap, infant seat, etc.); problems with sucking, swallowing, choking, gagging, regurgitation, vomiting; estimated caloric intake (calories/kg.); if tube fed: type and size of tube, frequency of tube change, date of last tube change; indicatin of satiety; resistance to feeding, feeding skills.

VII. IMMUNIZATIONS

VIII. MEDICATIONS

Type; dosage; method of administration; blood levels monitored(?); parent's understanding of purpose and side effects.

IX. ALLERGIES

Medications, food, environmental allergies, family history of allergies.

X. REVIEW OF SYSTEMS

A. Head: size, shape, anterior fontanelle open or closed.

B. Shunt (if present): type, location, swelling, redness, signs of increased intracranial pressure (irritability, lethargy bulging fontanelle, vomiting, eye deviation).

C. Eyes: tracking, visual acuity, strabismus, swelling or drainage, seen by ophthalmologist(?).

D. Ears: hearing status, pulling at ears, drainage, presence of tubes, past ear infections, seen by ENT(?).

E. Nose: congestion

F. Mouth/Throat: drooling, pooling of secretions, past throat infections, lesions, number of teeth, currently teething(?), oral hygiene practice, seeing a dentist(?).

G. Respiratory: breathing pattern, wheezing, retractions, dyspnea, tachypnea, cyanosis, do parents know CPR(?).

1. IF ON O_2: frequency, concentration, method of administration.
2. TRACH: frequency of trach care, parent's comfort level.
3. SUCTIONING: frequency, type of equipment, results.
4. APNEA MONITOR: type of monitor, schedule of use, frequency of alarms, type of stimulation needed.
5. CHEST PT: correct procedure, schedule, child's tolerance, results

H. Cardiovascular: known cardiac defects or murmurs, cyanosis, sweating, color and temperature of extremeties.

I. GI: vomiting, colic, umbilical hernia, diarrhea.

1. BOWEL ELIMINATION: frequency of bowel movements, stool consistency and color, blood in stool, cathartics used.
2. TOILET TRAINING: developmental readiness, parental expectations, age at onset, procedure, consistency, type potty chair.

J. GU: bulging in groin (hernia) or scrotum (hydrocele); unusual genitalia.

1. URINARY ELIMINATION: frequency of urination, amount, appearance of urine, stream or dribbling, past UTIs, odiferous urine, toilet training (see above).

K. Neuromuscular: posture, muscle tone (stiff or floppy), symmetry of movement, amount and method of mobility, motor milestones, temperature control.

1. SPINA BIFIDA: motor and sensory level affected.
2. SEIZURES: description, frequency of occurrence, precipitating events, duration, post-ictal phase, seen by neurologist(?), had EEG(?), on anticonvulsants(?).

L. Skeletal-Joint: contractures, scoliosis, leg length, discrepancy, areas of warmth, redness or swelling, past fractures.

M Skin: temperature, color, texture, rashes, bruising, lesions, decubiti, stoma care (i.e., gastrostomy).

XI. DEVELOPMENTAL STATUS (May obtain from other disciplines)

A. Social/Emotional.

B. Cognitive.

C. Communication.

D. Sensorimotor.

XII. SLEEP

Sleep patterns, schedule, type of bed, location of bed, night awakening and parental response.

XIII. TEMPERAMENT/BEHAVIOR

Temperament, crying patterns, temper tantrums, and parental response, irritability and soothing measures, self-comforting behaviors, communication of needs, discipline, understanding of infant's cues.

XIV. ASSISTIVE DEVICES

Type of car seat, bath aid, stroller, wheelchair· bracing or other special equipment.

XV. SAFETY

Safety strap on equipment, hot water temperature, dangerous substances, and medication out of reach, stairwell gates, outlet plugs, etc.

XVI. FAMILY ADJUSTMENT

Who is primary caretaker(?); interaction style of parents and child; sibling reactions and participation; reaction of extended family members and friends; babysitter available and utilized; day care services used; perceived changes in family lifestyle; do parents have social outlets(?); acceptance and understanding of diagnosis; coping patterns; support system; involvement in parent support group; knowledge of community resources; what do they like best about child(?).

HEALTH ASSESSMENT OF SCHOOL-AGED CHILDREN

Priority Assessment: 1) pre-school (pre-K) 2) grades 6-7 3) grades 11-12

Anytime: 1) Child identified as having a problem 2) Athletic participation

History:
1) Major past health problems (physical and emotional) and treatment
2) Orderly review of systems
3) Information regarding current and past special problems of other family members
4) Information about child's academic achievement and school adjustment
5) Immunizations

Assessment: Physical, Emotional, Intellectual Status

Age	Screening/Evaluation/DxNeeded	Special Areas
Preschool:	Vision-R/O strabismus, amblyopia hearing, speech, language development. Height, weight, head circumference, blood pressure Dental Immunization status Hgb	-Key event to focus family attention on importance of child health and development status -Detection of chronic or handicapping condition -Abuse/neglect, children without health care
Grade School:	Vision-check acuity, myopia Hearing Height, weight, blood pressure Dental-caries, malocclusion Immunization status Motor, emotional, intellectual development School grades & achievement, ITBS Grade level vs. age Hgb Scoliosis	-Avoid labels derived from imprecise or unsubstantiated diagnosis -Special needs of adopted children -Distinguished findings with true health significance
Adolescent:	As grade school above plus: Tanner Stage Check disfigurement-acne oral-facial, scoliosis Obesity/nutrition 15% F, 8% M Visual & refractive exam 50% F, 30% M, myopic by age 17 Dental defects-caries, malocclusion Hearing loss Immunization status	-Human growth & development -Menstrual disorder/ dysmenorrhea -Pregnancy/contraception/VD -Suicide -Increased accidents -Alcohol, tobacco, drug abuse -Athletic injuries -Hypochondriasis -School failure (dropout)

GUIDELINES FOR HEALTH SUPERVISION

Each child and family is unique; therefore these **Guidelines for Health Supervision of Children and Youth**[1] are designed for the care of children who are receiving competent parenting, have no manifestations of any important health problems, and are growing and developing in satisfactory fashion. **Additional visits may become necessary** if circumstances suggest variations from normal. These guidelines represent a consensus by the Committee on Practice and Ambulatory Medicine, in consultation with the membership of the American Academy of Pediatrics through the Chapter Chairmen.

The Committee emphasizes the great importance of **continuity of care** in comprehensive health supervision[2] and the need to avoid **fragmentation of care**[3].

A **prenatal visit** by the parents for anticipatory guidance and pertinent medical history is strongly recommended.

Health supervision should begin with medical care of the newborn in the hospital.

	INFANCY						EARLY CHILDHOOD					LATE CHILDHOOD					ADOLESCENCE			
AGE[4]	By 1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	24 mos	3 yrs	4 yrs	5 yrs	6 yrs	8 yrs	10 yrs	12 yrs	14 yrs	16 yrs	18 yrs	20+ yrs
HISTORY																				
Initial/Interval	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MEASUREMENTS																				
Height and Weight	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Head Circumference	●	●	●	●	●	●														
Blood Pressure										●	●	●	●	●	●	●	●	●	●	●
SENSORY SCREENING																				
Vision	S	S	S	S	S	S	S	S	S	O	O	O	O	O	S	O	O	S	O	O
Hearing	S	S	S	S	S	S	S	S	S	S	O	O	S[5]	S[5]	S[5]	O	S	S	O	S
DEVEL./BEHAV. ASSESSMENT[6]	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PHYSICAL EXAMINATION[7]	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PROCEDURES[8]																				
Hered. Metabolic Screening[9]	●																			
Immunization[10]		●	●	●			●	●				●					●			
Tuberculin Test						●	———	———	●	———	———	———	———	●	———	———	———	———	●	———
Hematocrit or Hemoglobin[12]	———	———	———	———	●	———	———	———	●	———	———	———	———	●	———	———	———	———	●	———
Urinalysis[13]	———	———	———	●	———	———	———	———	●	———	———	———	———	●	———	———	———	———	●	———
ANTICIPATORY GUIDANCE[14]	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
INITIAL DENTAL REFERRAL[15]										●										

1 Committee on Practice and Ambulatory Medicine. 1981.

2 Statement on Continuity of Pediatric Care. Committee on Standards of Child Health Care. 1978.

3 Statement on Fragmentation of Pediatric Care. Committee on Standards of Child Health Care. 1978.

4 If a child comes under care for the first time at any point on the Schedule, or if any items are not accomplished at the suggested age, the Schedule should be brought up to date at the earliest possible time.

5 At these points, history may suffice; if problem suggested, a standard testing method should be employed.

6 By history and appropriate physical examination; if suspicious, by specific objective developmental testing.

7 At each visit, a complete physical examination is essential, with infant totally unclothed, older child undressed and suitably draped.

8 These may be modified, depending upon entry point into schedule and individual need.

9 PKU and thyroid testing should be done at about 2 wks. Infants initially screened before 24 hours of age should be rescreened.

10 Schedule(s) per Report of Committee on Infectious Disease, ed 18, 1982.

11 The Committee on Infectious Diseases recommends tuberculin testing at 12 months of age and every 1-2 years thereafter. In some areas, tuberculosis is of exceedingly low occurrence and the physician may elect not to retest routinely or to use longer intervals.

12 Present medical evidence suggests the need for reevaluation of the frequency and timing of hemoglobin or hematocrit tests. One determination is therefore suggested during each time period. Performance of additional tests is left to the individual practice experience.

13 Present medical evidence suggests the need for reevaluation of the frequency and timing of urinalyses. One determination is therefore suggested during each time period. Performance of additional tests is left to the individual practice experience.

14 Appropriate discussion and counselling should be an integral part of each visit for care.

15 Subsequent examinations as prescribed by dentist.

N.B. **Special chemical, immunologic, and endocrine testing** are usually carried out upon specific indications. Testing other than newborn (e.g., inborn errors of metabolism, sickle disease, lead) are discretionary with the physician.

Key: ● = to be performed; S = subjective, by history; O = objective, by a standard testing method.

TANNER STAGES OF DEVELOPMENT

CLASSIFICATION OF SEX MATURITY STAGES IN GIRLS

STAGE	PUBIC HAIR	BREASTS
1	Preadolescent	Preadolescent
2	Sparse, lightly pigmented, straight, medial border of labia	Breast and papilla elevated as small mound, areolar diameter increased
3	Darker, beginning to curl, increased amount	Breast and areola enlarged, no contour separation
4	Coarse, curly, abundant but amount less than in adult	Areola and papilla form secondary mound
5	Adult feminine triangle, spread to medial surface of thighs	Mature, nipple projects, areola part of general breast contour

CLASSIFICATION OF SEX MATURITY STAGES IN BOYS

STAGE	PUBIC HAIR	PENIS	TESTES
1	None	Preadolescent	Preadolescent
2	Scanty, long, slightly pigmented	Slight enlargement	Enlarged, scrotum, pink, texture altered
3	Darker, starts to curl, small amount	Longer	Larger
4	Resembles adult type, but less in quantity, coarse, curly	Larger, glans and breadth increase in size	Larger, scrotum dark
5	Adult distribution, spread to medial surface of thighs	Adult	Adult

(Adapted from Tanner, J. M. Growth at Adolescence. Ed. 2. Oxford, Blackwell Scientific Publications, 1962.)

BEST COPY AVAILABLE

EXAMPLES OF ABNORMAL FINDINGS

Area of Abnormal Finding	Finding	Diff Dx.	Implications	Action of Special Education Nurse
Skin	Open lesions	Chicken pox Herpes Impetigo	Communicable to other pupils and to staff	Follow guidelines and policies of local district for restricting from school and/or participation in athletics or PE classes. Alert staff and review procedures for personal hygeine and cleaning of equipment.
Head and Neck	Abnormal tympanic membranes	Middle ear effusion	Hearing difficulties	Medical referral. Temporary seat change in classroom.
	Malocclusion		Speech problems. Nutritional problems	Referral for correction and remediation. Assess intake; especially protein. Modify school lunch if necessary
	Down Syndrome		Atlanto-axial joint instability	Refer for x-rays - limit physical activity until diagnostic work-up is complete. Apply necessary restrictions if diagnosis is positive.
	Dental caries	Nutritional deficit, Poor hygiene		Referral for dental care. Training for oral hygiene.
Thorax and Lungs	Respiratory difficulties	URI Asthma	Contagian Frequent absence from school.	Follow guidelines concerning attendance. Check environmental agents and take action to decrease exposure to irritants.
			Note: An exception to medication policies may be necessary so that a pupil may carry inhalant medication as prescribed by his/her physician.	
	Male breast changes	Gynecomastia	Parent/pupil anxiety	Education and counseling
	Female breast changes	Determine Tanner stage	Menarche	Counseling/teaching about breast self-examination and menstruation.
Cardiovascular	Persistent high BP reading		Renal or adrenal disease	Referral. Counseling about diet and stress management.
	Murmur	Functional Organic	Relief of anxiety Cardiac overload or unnecessary restriction of activity	Education of pupil and parents. Referral. Staff understanding of pupil's capabilities.
	Sinus arrythmia	Benign Severe	Disappear with exercise Increase with position change	Refer for exercise EKG. Physician permission for activities and/or competition.
Genito Urinary	Incontinence	Developmental delay Neurogenic bladder.	Toilet training or conditioning. Intermittent catheterization	Develop IEP to include training for highest self-care level. Teach self-catheterization when when possible.
	Pubertal changes		Need for education in life changes.	Teach self exam of testes to male pupils.
		Note: The Tanner stages of development chart is included in this section for reference.		
Gastrointestinal System	Ileostomy or Colostomy		Self care training Staff training	Nutritional status evaluation. Health plan for daily care. Consideration of proximity of bathroom to classroom Modification of school lunch if necessary.
	Encopresis		Staff training	Counseling to maintain self-esteem.
	Gastrostomy		Skin breakdown Nutritional risk	Plan for feedings and daily care of skin and mouth.
Musculo Skeletal	Motor deficits	Cerebral palsy	Positioning Bracing Feeding problems	Skin care. Modifications of school lunch to insure proper texture. OT & PT support as needed.
		Arthritis	May be progressive	Monitor medical regimen. OT & PT support as needed.
	Kyphosis/ Scoliosis	Subluxation	May be progressive	Referral for monitoring/treatment
Neurological System	Seizures	Epilepsy	Status epilepticus	Emergency plan for immediate medical intervention Inservice for all staff on disease, medications, and implications.
	Myelomeningocele		Shunt Braces/crutches	Observe for signs of intracranial pressure. Skin care.

DEFINITIONS

HEALTH STATUS: the health condition of an individual as related to physical difficulties, emotional disturbances, evidence of immunizations, and the number and kinds of accidents and illnesses.

HEALTH INFORMATION: the part of the health record of a person that has to do with discovering and recording of past illnesses and any other factors affecting his growth and development during infancy and childhood.

HEALTH HISTORY: involves special nursing skills to "get the facts" behind the information, assess the facts for relevance to the individual, and utilize the facts in further assessment.

HEALTH PROGRAM: a planned organization of the resources of the school, usually involving also those of home and community in order to promote desirable knowledge, habits, and attitudes about health for the purpose of improving the health condition of the pupils and their environment; usually implemented by such means as periodic physical examination. classes in health and hygiene, nutrition programs, and the regulation of health conditions within the school as well as by attempts to enlist the cooperation of the home and of community agencies.

NURSING DIAGNOSIS: "A nursing diagnosis is a clinical judgment about an individual, family. or community which is derived through a deliberate, systematic process of data collection and analysis. It provides the basis for prescriptions for definitive therapy for which the nurse is accountable. It is expressed concisely and it includes the tiology of the condition where known" (Shoemaker. 1984, p. 94).

Resource

Kim, M.J. & Moritz. D.A. (Eds.) (1982). Classifications of nursing diagnoses: Proceedings of the third and fourth national conferences. New York: McGraw-Hill Book Company.

CONFIDENTIAL
SAMPLE

HEALTH INFORMATION

_____ File #
_____ Initial
_____ Review
_____ School District

Name_____ Birth Date_____ M F Date_____
Information By_____
Vision Screening: (To be completed by screener) (R)_____ (L)_____

FAMILY

Mother's Name_____ Age_____
Address_____ Phone_____
Father's Name_____ Age_____
Address_____ Phone_____
Other Family Members
Number of Brothers_____ Ages_____
Number of Sisters_____ Ages_____

1. Is there a family history of the following

	Yes	No		Yes	No
Speech Problems	___	___	Learning Problems	___	___
Allergies	___	___	Kidney Problems	___	___
Heart Problems	___	___	Asthma	___	___
Seizures	___	___	Diabetes	___	___
Hearing Problems	___	___	Alcohol Problems	___	___
Muscle Disorders	___	___	Other Health Problems	___	___

PREGNANCY AND DELIVERY

2. During this pregnancy were any of the following present?

	Yes	No		Yes	No
Gained less than 15 pounds	___	___	Gained more than 30 pounds	___	___
Bleeding	___	___	Elevated blood pressure	___	___
Any infection or sickness	___	___			
Used alcohol. drugs, or smoked (underline correct ones)				___	___
Difficult labor and/or delivery				___	___

Length of pregnancy_____
Medications taken during pregnancy (list)_____
_____

INFANT

3. Were any of the following present?

	Yes	No	
Was cord around neck?	___	___	
Were there any problems with breathing?	___	___	
Was infant blue?	___	___	
Was infant yellow or need the bilirubin light?	___	___	Birth
Did infant have any heart problems?	___	___	Weight
Did infant have any lung problems or need oxygen?	___	___	_____
Did infant have seizures?	___	___	
Was infant very jittery?	___	___	
Did infant receive any medications?	___	___	

Did infant have any injections? If yes, list_____

_____

Did infant have any surgery? If yes, list_____

_____

Did infant come home with you from hospital? ___ ___

DEVELOPMENTAL PROGRESS

4. Did this child develop at about the same rate as other children?
   Yes___ Faster___ Slower___ COMMENTS_____
5. Do you feel your child's size and weight are: Normal___
   Overweight___ Underweight___ Present Height___ Weight___
6. Has this child experienced more than 2 ear infections or sore throats?
   Yes___ No___
7. Has this child been hospitalized? Yes___ No___ Reason_____

   _____
8. What childhood diseases has this child had?_____

   _____
9. Has this child had any seizures or staring spells? Yes___ No___
10. Does this child have any stiffness or rigidity of muscles? Yes___No___
11. Has this child had any serious accidents? Yes___ No___
12. Does this child have problems with any of the following?

	Yes	No		Yes	No
Speech Problems	___	___	Vision Problems	___	___
Appetite Problems (poor or extreme hunger)	___	___	Feeding Problems (chewing, choking, etc.)	___	___
Stomachaches	___	___	Bedwetting	___	___
Trouble falling asleep	___	___	Trouble staying asleep	___	___
Overactive	___	___	Temper tantrums	___	___
Moody	___	___	Extreme shyness	___	___
Short attention span	___	___	Withdrawn behavior	___	___
Failure to be affectionate to parents	___	___	Poor relationships with brothers and/or sisters	___	___
Poor relationships with age mates	___	___	Heart problems	___	___
Asthma	___	___	Kidney problems	___	___
Diabetes	___	___	Epilepsy	___	___
Cancer	___	___	Allergies	___	___
			Other Chronic Diseases	___	___

13. Is this child on any medication now? Yes___ No___
    Type of medication Reason for use

    _____

    _____

    _____
14. Has or does your child attend school or preschool? If so, where has this child attended and when?_____

    _____
15. Are this child's immunizations up to date? Yes___ No___
16. What is the name/s of this child's physician/s and addresses?_____

    _____

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF MY KNOWLEDGE

_____
Signature of Parent, M.D., or R.N.

SAMPLE
Yearly Update
To be completed by
Parent/Guardian

HEALTH QUESTIONNAIRE

Student Name:_____ Teacher:_____
Doctor's Name:_____ Hospital preference:_____
Did your child have a physical this past year? __Yes __No
Doctor:_____ Date:_____
Did the doctor have any specific recommendations? __Yes __No
Please explain:_____
_____
Has your child been sick this past year? __Yes __No
What was wrong?_____
_____
Did he/she see a doctor? __Yes __No
Doctor:_____ Date:_____
Were tests taken, such as blood work? __ Yes __ No
Results:_____
Was any specific treatment ordered by the doctor such as medicine?
__Yes __No Please explain:_____
_____
Has your child had an injury in the past year? __Yes __No
If yes, date:_____
What part of his/her body was hurt? (Head, left leg, etc)_____
Was he/she seen by a doctor? __Yes __No Doctor:_____
Were x-rays taken? __Yes __No
Results:_____
Did the injury require treatment such as stitches or a cast?
__Yes __No Please explain:_____
_____
Has your child had his/her eyes checked by a doctor in this past year?
__Yes__No Doctor:_____ Date:_____
Did he order glasses or new glasses? __Yes __No
Did he have any specific recommendations? __Yes __No
Please explain:_____
_____
Is your child taking medication? __Yes __No

Medication:	Dosage:	Times medication given:
_____	_____	_____
_____	_____	_____
_____	_____	_____

Reason medication was ordered:_____
_____
Have you noted a recent change in your child's eating, sleeping, or toileting patterns? __Yes __No
Please explain:_____
_____
Has your child been seen by a dentist in the past year? __Yes __No
Dentist:_____ Date:_____
Did he have specific recommendations or treatments? (Ex. braces, surgery, fillings)_____
Has your child had any immunization shots in the past year? __Yes __No
Type:_____ Date:_____
Doctor:_____
Has your child been seen over the summer for a scoliosis check?
__Yes __No
If so, were x-rays taken? __Yes __No
Results:_____
Recommendations:_____
Physical Limitations:_____

HEALTH EVALUATION

Student's Name _____ Birthdate: _____

Parent/Guardian: _____

Family Structure: _____

_____

Previous Medical Reports: _____

_____

Vision: _____ Glasses: _____ Lens Change: _____

Hearing: _____

Dental Exam: _____

Immunization Record: _____

Medications: _____

Nutrition: _____

Family Medical Problems: _____

_____

Prenatal/Birth: _____

Growth and Development: _____

Illnesses/Surgeries: _____

Present Health: _____

Impression/Recommendation:

____ I. Health status adequate for unrestricted educational program.

____ II. Health status requires restrictions/modifications of educational program. (See individualized Health Plan or I.E.P.)

_____ _____

Date Nurse

UPDATE FOR SCHOOL HEALTH RECORD

TO: Parents or Guardians

Please complete the following health update form. The information will be used to supplement existing school health records. The information requested should include pertinent details since the beginning of the last school year.

Return Completed Form To_____

****

Name of Child_____Age___Grade___
Date_____Address_____Home Phone_____
Employment: Father_____Business Phone_____
Mother_____Business Phone_____
Any family changes (marital, health, new siblings, etc.)_____
_____

****

Physician:_____ Dentist:_____
Any medical services received this past year (where, when)_____
_____
Immunizations (Kind)_____Date_____Allergies_____
Diseases or accidents (Kind)_____
Hospitalizations_____Operations (Kind)_____
Medication taken on a regular basis (Name and what for)_____
Last dental exam (date)_____Last eye exam (date)_____New glasses or lenses ____Y ____N

****

UPDATE ON HEALTH HISTORY Check those which apply to this child

___Weight change	___Menstrual problems	___Heat or cold intolerance
___Appetite change	___Abdominal pain	___Seizures
___Sleeping problems	___Bedwetting	___Headaches
___Skin problems	___Difficult urination	___Dizziness
___Respiratory problems	___Frequent urination	___Tremor
___Heart problems	___Urinary infection	___Clumsiness
___Diarrhea	___Backache	___Nightmares
___Constipation	___Joint pain, swelling, stiffness	___Emotional changes
___Blood in stool	___Deformities	___Allergies
___Diabetes		___Tubes in ears

OTHER CHANGES OR COMMENTS: Any health problems of which the school should be aware?_____
List braces, hearing aids, etc. explain:_____

****

In case of illness, if we are unable to contact you, the parent/guardian, who shall be called?
Name_____Phone_____

It should be understood that proper attention for the child is our primary concern. Dr. _____ is to be called at parent's expense in case of an emergency. If it should become necessary, a child will be taken to the nearest hospital at the parent's expense.

_____
Signature of Parent/Guardian

SAMPLE

REFERRAL FOR CARE

Name_____Birth Date_____

To_____ _____
Address

Reason for Referral:

_____
(If an injury, date of last tetanus shot known to school)

Thank you,

Date_____ Signature_____

(Please send bottom half of form back to school with patient)

Reply:

Name_____

Diagnosis_____

_____

Treatment given_____

_____

_____

Date of next appointment_____

Recommendations to the school:

Date_____ Signature_____

Source: River Hills School
2700 Grand Boulevard
Cedar Falls, IA 50613

REQUEST FOR SPECIAL EDUCATION NURSE SERVICES

Date _____

Student's Name _____ Grade _____ Teacher _____

School District _____ School Building _____

Referrer _____

Student's Birthdate _____

Male _____ Female _____

Address _____ Home Phone _____

Parent _____

Referral Concerns _____

_____

_____

_____

_____

_____

_____

_____

Please send directly to:

_____
Special Education Nurse
AEA 4
102 South Main
Sioux Center, IA 51250

Source: Area Education Agency 4
Sioux Center. IA 51250

TEACHER'S HEALTH OBSERVATIONS

Student's Name_____ Age_____ Date_____

Teacher_____ Room_____

Does this student complain of or demonstrate any of the following?

	Yes	No		Yes	No
Temper tantrums			Skin rash		
Impulsive behavior			Frequent scratching		
Explosive behavior			Sores on skin		
Hyperactivity/restlessness			Pale or sallow skin		
Withdrawn			Continuous runny nose		
Inactive/sluggish			Frequent nose picking/rubbing		
Sleepy/lethargic			Unkept appearance		
Tics or grimacing			Cough		
Clumsy			Wheezing		
Limp or abnormal gait			Short of breath with exercise		
Poor condition			Overweight		
Convulsions			Underweight		
Periods of inattention or staring into space			Stomachaches		
Headaches			Vomiting		
Eyes crossed or turned out			Frequent urination		
Poor vision			Wets pants		
Red, runny. or itching eyes			Soils self with bowel movements		
Poor hearing			Gets along well with peers		
Discharge from ear					

What is your opinion of this child's health?
Very good ____ Good ____ Fair ____ Poor ____

Attendance: Very good ____ Good ____ Fair ____ Poor ____

Further observations or comments:

SAMPLE

HEALTH EVALUATION

PURPOSE _____

Name _____ DOB: _____ Date _____

Handicapping condition _____

Appliances/Braces _____

PHYSICAL EXAM:

Date: _____ Examiner: _____

Findings: _____

INTERVAL HEALTH HISTORY

VISION: Date _____
Findings: _____

HEARING: Date _____

IMMUNIZATIONS:

DENTAL EXAM: Date _____
Findings: _____

OTHER EXAMS: Date _____

MEDICATIONS: _____

ALLERGIES: _____

SEIZURES/DISORDERS _____

INTERESTS/ACTIVITIES _____

GROWTH & DEVELOPMENT _____

NUTRITION _____

STRENGTHS/WEAKNESSES _____

AREAS OF CONCERN _____

REFERRALS _____

ADAPTIVE DAILY LIVING

Feeding _____

Dressing _____
Bathroom _____
Speech/Language _____

Source: Smouse School
Des Moines, IA 50312

SPECIAL EDUCATION NURSES

Date of Previous
Health History: _____

Date: _____
Interviewer: _____
Health History and Information
Given by: _____

COMPREHENSIVE HEALTH HISTORY-SECONDARY
3 YEAR UPDATE

I. Identification and Referral Information

Child's Name: _____
(Last) (First) (Name Used)

Home Address: _____ Home Telephone: _____

Sex _____ Date of Birth: _____

Father's Name: _____ Employment: _____

Business Telephone: _____

Mother's Name: _____ Employment: _____

Business Telephone: _____

Attendance Center (Present): _____

Attendance Centers in 3 years interval since last health history _____
_____
_____

Family Doctor: _____ M.D. or D.O.
(Name)

_____
(Address, City and Zip Code)

List any evaluations your child has had in the past 3 years including medical, dental, and educational:

Name	Address	Date of Evaluation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

II. Family Background

Has the marital status changed for the parents in the last 3 years? If yes, please state change: _____

Are there any new siblings? If yes, please complete the following information.

Name	Sex	Birthdate	Age	Grade	Problems or Disabilities

Have any new health problems been diagnosed in any of your family members over the past 3 years? If yes, please identify the problem and the relationship to your child.

_____

_____

_____

Do you as parents have any functional health problems or physical limitations?

Daily medications? Please explain: _____

_____

Has anything happened recently that has affected the family functioning?

____ Yes ____ No Explain: _____

How has your child reacted to this event: _____

_____

III. Developmental History

Is your child receiving speech/language services at school? _____

Individualized? _____ Group? _____

How often? _____

Is your child menstruating? ____ Yes ____ No Onset _____

If yes, describe her period: _____

Having wet dreams? ____ Yes ____ No

What has your child's reaction been to this? _____

Have you discussed sexual development with your child? ___ Yes ___No

Has your child been sterilized? ___ Yes ___ No Do you have concerns about this?

Does your child exhibit any unusual sexual curiosity or sexual activity? ___ Yes ___ No Explain: _____

Consideration for Marriage? _____

Would your child understand about birth control? ____ Yes ____ No

Would you like your child's school program to cover material on sexual-social skills: ____ Yes ____ No

If yes, do you have any specific areas you would like information concerning? _____

If applicable, has a guardianship been established for your child? ___ Yes ___ No With whom? _____

IV. Medical History

Has your child received any immunizations in the past 3 years? If yes, please identify?

Immunization	Date	Where Given
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Has your child had a skin test for tuberculosis? ____ Yes ____ No

Was it: ____ Positive ____ Negative ____ Don't Know

Chest X-Ray? ____ Yes ____ No Date: _____

Does your child have any allergies? _____

****

Please list any diseases or illnesses your child has had in the past 3 years

Illness or Disease	Treatment	Date

Has your child been hospitalized? ___ Yes ___ No If yes, please explain. (Please include surgeries)

Hospitalization

Place	Reason	Date	Length of Stay

Has your child had any serious accidents? ___ Yes ___ No Date _____

Explain: _____

Is your child on medication now? ___ Yes ___ No. If yes, please answer the following:

Name of Medication	Dosage	When Given & How Administered	Given for What Reason	Physician Prescribing

When was your child's last physical examination? _____ by whom? _____

When was your child's last dental examination? _____ by whom? _____

When was your child's last visual medical examination? _____ by whom? _____

When was your child's last hearing medical examination? _____ by whom? _____

Has your child any specific physical limitations? ___ Yes ___ No
Explain: _____

Does he/she wear glasses? __ Yes __ No If yes, for what purpose?
_____

When was the last glasses change? _____

Does he/she wear a hearing aid? __ Yes __ No If yes, for what purpose? _____ How often? _____

Does your child know how to care for his/her glasses? _____

Does your child know how to care for his/her hearing aid? _____

Know how to put it in place? _____

Does your child wear a brace or use special equipment (wheelchair, crutches, etc.) __ Yes __ No If yes, please explain: _____
_____

V. Social and Personal Hygiene History

What method of discipline do you find most effective with your child?
_____

What is the child's most common reaction to discipline?

____ cries	____ hits	____ places blame elsewhere
____ sulks	____ withdraws	____ responds favorably
____ sasses	____ laughs	____ variable
____ repents	____ gets angry	___ other _____

Does the child have his/her own room? ____ Yes ____ No

If he/she shares a room, do each of them have their own bed?
____ Yes ____ No

Describe your child's sleeping pattern: _____

Describe regularity, amount, need for naps and usual schedule: _____
_____

Has your child's general coordination and balance changed in the last 3 years? ____ Yes ____ No. If yes, please explain: _____
_____

Are there any physical activities in which your child cannot safely participate? _____

What does your child eat for breakfast? _____
Lunch? _____ Dinner? _____

Food that child strongly dislikes _____

Frequent snacks _____

Food cravings and preferences _____

Are there any special mealtime problems? _____

Can the child close his/her mouth? ____ Chew? ____ Swallow? ____

Does he/she choke easily? _____. Does he/she eat solid food? _____
Semi Solid? _____ Pureed food only? _____

Does he/she take vitamins? ___ Yes ___ No If yes, what kind? __ ___

Do you feel your child has a weight problem? (overweight or underweight)
___ Yes ___ No Would you like information or counseling concerning
this weight problem? ___ Yes ___ No

How often does your child take a complete bath or shower? _____
Wash their hair? _____ Brush their teeth? _____

What assistance is given? _____

Does your child use deoderant? ___ Yes ___ No Regularly? _____

Is your child independent in toileting or does he/she need assistance.
Please explain: _____

Does your child get along well with other family members? __ Yes __ No
Explain: _____

Does your child make friends easily? ___ Yes ___ No Does he have a
special friend or friends? ___ Male ___ Female Are they? __ Older
___ Younger ___ Same Age

How would you describe the nature of your child's play? ___ Alone
___ Parallel ____ Interactional Explain: _____

Does your child play with other children? ____ Yes ____ No

Does he/she have the opportunity to play with other children? ___ Yes
___ No

Would you like more opportunity for your child to participate in social
activities with other children of same age outside of school? ___ Yes
___ No

What activities does your child enjoy? _____

What kind of experiences does your child engage in outside of school? ___

Has your child attended summer camp for special children? ____ Yes __ No
Do you want information about summer camp for special children? ___ Yes
___ No

How does he/she spend their free time at home? _____

What responsibilities does he/she have at home? _____

What are your child's favorite toys? _____

Is there space for outdoor play? _____

Can your child play outside unsupervised? _____

What activities does he/she engage in when outside? _____

Does your child ride a bicycle? _____

As a family, how do you spend your time together _____

Do you receive any type of assistance? ___ Yes ___ No If yes, which kind? _____

VI. Behavior and Personality

Have you noticed any changes in behavior or personality in the child in the past year? ___ Yes ___ No Explain _____

Describe any fears that the child exhibit _____

What is your child's attitude toward himself? _____

What are your child's strengths? (social, emotional, intellectual, personality, etc.) _____

What are your child's difficulties as you see them? _____

What are your expectations for your child? Educationally _____ _____ Vocationally _____

VII. Additional Information

Is there any additional information that would help our staff in evaluation of the child? _____

_____

_____

_____

_____

_____

_____

Source: Arrowhead AEA 5
Fort Dodge, IA 51501

SPECIALIZED
PHYSICAL HEALTH CARE

EMERGENCY SITUATIONS

With the implementation of P.L. 94-142, school districts recognize that to enable some students to attend school, there must be access to specialized physical health care services. In most cases, these services are provided by the primary caretaker before or after school hours, but at times it becomes necessary for the treatment to be provided during school hours. When this specialized care is provided in the school setting, it is imperative that procedures be carefully written out and proper approval and authorization from physican and legal guardians be signed and on file. Documentation of the procedure must be maintained as a legal document to verify implementation. In some cases, the Special Education Nurse may delegate the task to another designated staff person. In this case, proper training and periodic review through observation of performance must be documented by the Special Education Nurse.

If the pupil requiring service is a resident of a care facility, it is important to determine if the procedure must be performed by a registered nurse in order to maintain funding. The legalities of delegating responsibility for procedures must be considered at all times.

Other health care procedures may be needed to serve health needs of special education students. Procedures for situations such as bee stings, head injuries, epistaxis, factures, ostomy care. etc. are covered in the primary care textbooks listed as references.

ANAPHYLACTIC REACTION

I. Anaphylactic reaction is a generalized systemic reaction which may result from the administration of foreign serums or drugs, the digestion of foods, or the sting of an insect and can be fatal.

A. Preventive Measures

1. All staff should be aware of dangers of anaphylactic reactions.
2. Identify persons with known allergies to medications, foods, pollens, bee stings, etc.
3. Urge individuals to wear identification tags and make note of allergies on health record and in classroom.

B. Symptoms (Sudden onset--within minutes of getting the dose of an offending agent)

1. Apprehension and flushing.
2. Sneezing and coughing, swollen tongue.
3. Itching or burning (generalized itching indicates a general systemic reaction is developing), urticaria.
4. Respiratory difficulty
5. Wheezing or shortness of breath.
6. Cyanosis or pallor, imperceptible pulse, loss of consciousness.

II.

PROCEDURES	KEY POINTS AND PRECAUTIONS
1. Determine that student has symptoms of an anaphylactic reaction.	When in doubt, treat the person for an anaphylactic reaction.
2. Give appropriate amount of medication prescribed. Use epinephrine* or medication prescribed by private physician.	Student should respond within 5 to 10 minutes.
3. Establish vital functions, insure adequate airway, employ CPR if necessary.	Doses are given subcutaneously at 15 minute intervals for a total of three doses, if necessary. Call paramedics or transport student to nearest hospital emergency room.
4. Notify physican and parents.	Send all information with the student
5. Record procedure on log and permanent health record.	

*Physicians may recommend the use of Epipen which will simplify administration of the drug.

DYSREFLEXIA ALERT

Acute autonomic dysreflexia is a serious medical problem found in students with spinal cord lesions at about the seventh thoracic level. A stimulus initiates a reflex action of the sympathetic and parasympathetic system causing hypertension that cannot be relieved by action of the vasomotor center because of the level of the spinal cord lesion. This response, if not controlled, can precipitate a cerebral vascular hemorrhage.

Have sources notify the pupil's physician, parents, and supervising nurse immediately if the student shows signs of acute autonomic dysreflexia.

I. GENERAL GUIDELINES

A. Symptoms

1. Sweating (diaphoresis) above the level of injury
2. Goose bumps
3. Flushing or blotching
4. Chills without fever
5. Pounding headache
6. Elevated blood pressure 20 mm Hg. above the student's normal pressure. The "average" quadriplegic will have blood pressure of 90/60 or lower in the sitting position.
7. Bradycardia (abnormal slowness of heartbeat)

B. Etiology (Causes)

1. Distended bladder or severely spastic bladder
2. Fecal mass in the rectum
3. Other stimuli to viscera (i.e., pressure on skin surface, urological procedure or problem, and so forth)

C. Equipment for Providing Treatment

1. Nupercainal ointment
2. Gloves
3. Blood pressure cuff
4. Stethoscope

D. Personnel Recommendation

A pupil suffering from acute autonomic dysreflexia creates a serious medical emergency situation. All staff personnel should cooperate in performing appropriate activities, as directed by the qualified persons handling the emergency.

II. PROCEDURE

Place pupil in a sitting position and monitor the blood pressure every 1 to 2 minutes.

A. If blood pressure is almost double what the pupil's normal pressure is, keep physician informed.

B. If blood pressure is less than double, proceed as follows:

1. External catheter--If pupil is on an external catheter, do not use Crede's method.

   a. Tap bladder lightly, pull pubic hair gently or tug on external catheter, if present, for two minutes, providing blood pressure does not continue to rise. NOTE: Any stimulation (i.e., catheterizing, tugging on external catheter, or instilling medications) will cause the blood pressure to rise momentarily.
   b. If no results occur, catheterize with indwelling catheter and leave it in. Drain only 500 cc (see note below in 2f).

2. Indwelling catheter--If the student has an indwelling catheter, proceed as follows:

   a. Check to make certain plug or clamp has been removed.
   b. Check to make sure leg bag is not overly full, which may prevent proper drainage.
   c. Check for kinks in catheter or drainage tubing.
   d. Check inlet to leg bag to make sure it is not corroded.
   e. Determine whether catheter is plugged by irrigating the bladder slowly with no more than 30 cc of sterile water.
   f. Change catheter and leave in. NOTE: Drain only 500 cc of fluid and check blood pressure; if pressure is stilll elevated, immediately drain another 500 cc of fluid. Then wait 10 minutes between each subsequent drainage.

   NOTE: If blood pressure declines after bladder is emptied, the student will need to be watched closely as bladder can go into severe contractions causing hypertension to recur.

3. If you are sure the bladder is empty and the symptoms have not subsided, inject nupercainal ointment into the rectum. Wait 5 minutes before inserting finger to remove any feces present.

4. For fecal mass, insert nupercainal ointment (or substitute topical anesthetic) into the rectum. After symptoms have subsided, gently remove fecal mass.

REPLACEMENT OF TRACHEOSTOMY TUBE

I. GENERAL GUIDELINES

Policies and procedures for tracheostomy tube care must be written by each AEA and/or LEA, including physician's order and approval of implementation of service. The replacement of a tracheostomy tube can be done at school by a school nurse with current training in tracheostomy tube replacement or by paramedics with similar training. However, tracheostomy tubes should not be changed in the school setting except in an emergency. An example of such an emergency would be if the tube became dislodged and created an obstruction. If this occurs, the tube must be removed. If the entire tracheostomy tube comes out, it must be replaced immediately.

An extra tracheostomy tube with an obturator (appropriate size) should be kept at school.

If a problem develops in reinserting the tube, transport student immediately to physician or hospital emergency room.

II. CHANGING OF TRACHEOSTOMY TUBE

A. Purpose

1. To maintain an open airway

B. Equipment

1. Sterile tracheostomy tube (appropriate size)
2. Scissors
3. Twill tape for tying
4. Suction machine, including collecting bottle and connecting tube
5. Resuscitation bag, when ordered (such as Ambu bag)
6. Sterile disposable suction catheters
7. Nonwaxed clean paper cups
8. Supply of sterile normal saline
9. Sterile disposable syringes for introducing saline into trachea
10. Disposable clean plastic or rubber gloves
11. Tissues
12. Plastic lined wastebasket (kept beside suction machine and used for contaminated materials)

C. Recommended Procedure for Tracheostomy Tube Replacement

PROCEDURES	KEY POINTS AND PRECAUTIONS
1. Wash hands if student's condition permits you to do so.	
2. As you carry out this procedure, reassure student that he or she will be all right.	Calm and assured approach promotes student cooperation and ease of tube insertion.
3. Position student with head tilted back as far as possible.	
4. Assemble equipment.	
5. Open tracheostomy tube package.	
6. Put on gloves if student's status permits.	
7. Insert tracheostomy tube with obturator. Be certain that the tube and obturator have been moistened in sterile normal saline.	
8. Holding tracheostomy tube in right or left hand, pull out obturator and insert cannula.	
9. Unroll twill tape while student or another person holds tube in place until it is secured with tapes.	Check one end of tape for slit. If none is there, cut a slit with scissors. Cut one tape longer than the other so that knot will come at side of neck.
10. Secure tracheostomy tube with twill tape (not too tight).	
11. Record procedure on log and permanent record.	

HYPOGLYCEMIC REACTION (INSULIN SHOCK)

A. Hypoglycemic reactions (insulin reactions) should be treated according to current nursing and medical recommendations.

B. Periodic communication should be maintained between the school nurse and parents of students with diabetes to determine current condition and treatment regimen.

C. Students taking insulin may require care for hypoglycemic reactions resulting from:

1. Not enough food or delayed meal
2. Too much exercise
3. Nervous tension
4. Illness
5. Too large a dose of insulin

D. Hypoglycemic reactions occur most frequently:

1. Just before meals
2. After strenuous exercises

E. Symptoms of hypoglycemic reactions may include:

1. Trembling of body
2. Sweating (cold, clammy, pale skin)
3. Extreme hunger
4. Headache
5. Personality change (e.g., irritable, crying, and so forth)
6. Inability to concentrate, sleepiness
7. Dizziness
8. Confusion
9. Poor coordination (The person may have slurred speech.)
10. Unconsciousness or convulsions (These conditions usually occur when a person with the preceding symptoms has not been treated.)

F. Supplies

1. Available supply of sugar preferably carried by student. The following sugars are equal in desired amount for treatment:
   a. one tsp. sugar packets (3 tsps. needed)
   b. any sugar cubes (5 to 7 cubes = 3 tsps.)
   c. one-inch sugar cubes (3 cubes = 3 tsps.)
   d. unsweetened orange juice, 6-ounce can
   e. buccal jelly
2. Candy wafers (entire package of six) or one-third of a candy bar are not preferred sources of sugar.

G. Procedures

PROCEDURES	KEY POINTS AND PRECAUTIONS
1. Determine that student has symptoms of hypoglycemic reaction.	When in doubt, treat as insulin reaction; extra sugar will cause no harm.
2. Give appropriate amount of available sugar (refer to supplies list for correct amount). Sugar in packet or cube may be dissolved in an appropriate amount of water for <u>conscious</u> student.	Student will usually recover within 15 to 30 minutes and can return to class. Notify parents that reaction occurred at school. If student is not recovered after 30 minutes, contact parents and recommend medical care.
3. If pupil does not respond to above, initiate additional emergency procedures, which follow:	
a. Call paramedics or other emergency units or transer to trauma center.	Do not try to give anything that requires swallowing to an unconscious or convulsive student.
b. If student becomes <u>unconscious</u>, do the following:	
(1) Place student on side with airway open.	
(2) Insert buccal jelly in side of mouth or under the tongue.	
4. Contact parent regarding severity of reaction and follow-up by physician.	
5. Record procedure on permanent record.	

OTHER SPECIALIZED HEALTH CARE

POSTURAL DRAINAGE AND PERCUSSION

A. Students needing postural drainage have pulmonary dysfunction, such as cystic fibrosis, chronic bronchitis, asthma, other pulmonary disorders, muscular dystrophy, cerebral palsy, and so forth.

B. Postural drainage may be performned two to four times daily, depending upon student tolerance and physician's orders.

C. Additional postural drainage may be indicated when the student is congested or is having respiratory distress.

D. Suctioning may accompany postural drainage when ordered by the physician.

E. Equipment

1. Pillows
2. Tissues
3. Suction machine and accompanying supplies when ordered
4. Catheter
5. Water to clear catheter
6. Wastebasket (with plastic liner)

PROCEDURES	KEY POINTS AND PRECAUTIONS
1. Assemble equipment in appropriate location.	
2. Use the following sequence for percussing each lobe of the lungs:	
a. Place student in appropriate position.	Ten positions are necessary for percussing all lobes of the lungs. Use cupped hands with moderate pressure to create hollow sound during percussion. Avoid percussing over kidneys.
b. Percuss lobes for 3 minutes over appropriate area.	Initial coughing attempts may not produce sputum. As further positioning and percussion are provided, coughing will become more productive. (Use of vibration may break bones when students have abnormal bone conditions or are receiving medication, such as steroids.)
c. Instruct student to cough into tissue following each percussion. Discard used tissues into lined wastebasket. Use vibration (applying pressure to appropriate lobe during coughing.	
3. Use up to ten positions for percussing students weighing 40 pounds or more.	Refer to basic nursing text for proper positions.

PROCEDURES	KEY POINTS AND PRECAUTIONS
Position 1 Position student on stomach with right side of torso and right arm elevated on pillow.	Position 1 This one-quarter turn of body is the correct position for percussing posterior segment of right upper lobe--over right upper scapular area. NOTE: In all positioning, additional pillows may be necessary to obtain desired elevation; it depends upon student's weight.
Position 2 Position student on stomach with left side of torso and left arm elevated on pillow.	Position 2 This one-quarter turn with head and shoulder elevation is the correct position for percussing posterior segment of left upper lobe--over upper left scapular area. The left bronchus is more vertical, thus requiring a nearly 45 degree elevation.
Position 3 Position student flat on back, with pillows placed under head and knees.	Position 3 This position is correct for percussing anterior segments of right and left upper lobes--between clavicle and nipple areas.
Position 4 Position student on back. Turn hips one-quarter to the right. Elevate hips to 10 to 12 inches (2.5 to 3 cm) with pillows. Used additional pillows as needed to hold hips to right.	Position 4 This position is correct for percussing lingular process of left lung--from left armpit to nipple area.
Position 5 Position student on back. Turn hips one-quarter turn to the left. Elevate hips 10 to 12 inches (2.5 to 3 cm) with pillows. Use additional pillows as needed to hold hips to the left.	Position 5 This position is correct for percussing middle lobe of right lung--from right armpit to nipple area.
Position 6 Position student flat on stomach with pillows under stomach and lower legs/feet.	Position 6 This position is correct for percussing apical segments of right and left lower lobes--over lower scapular areas.

PROCEDURES	KEY POINTS AND PRECAUTIONS
Position 7 Position student on back, elevate hips 16 to 18 inches (4 to 4.6 cm) with pillows.	Position 7 This position is correct for percussing anterior basal segment of right and left lower lobes—over lower chest area below nipples.
Position 8 Position student on stomach. Elevate hips 16 to 18 inches (4 to 4.6 cm) with pillows.	Position 8 This position is correct for percussing posterior basal segments or right and left lower lobes—over lower chest areas (avoid kidneys).
Position 9 Position student on right side. Elevate hips to 16 to 18 inches (4 to 4.6 cm) with pillows.	Position 9 This position is correct for percussing lateral basal segment of left lower lobe—over left side from beneath armpit to end of rib cage.
4. The techniques for percussing students under 40 pounds (18 kg) and other students in a sitting position are as follows:	
A. Person who does the percussing sits in chair with legs outstretched at 45 degree angle and with bottom of feet braced against solid, upright object. Place pillow in front of your knees. Place student face down on your lap with his or her chin resting on the pillow.	This position is correct for percussing posterior basal segments of lower lobes—over area from lower scapulae to end of rib cage. NOTE: Young children and infants usually have no upper lobe involvement requiring percussion. Percuss with light pressure.
B. Seated as before, hold student face up on your lap, with his or her head resting on pillow.	This position is correct for percussing anterior segments of lower lobes--over area from below nipple to end of rib cage. NOTE: For babies, be sure head is firmly supported in both positions and percuss with light pressure.
5. After percussing/coughing in all positions, assist student with breathing techniques.	Percussion assists the student in raising sputum from the lung. This is the optimal time to accomplish maximum aeration of the lungs.
A. Encourage diaphragmatic breathing (breathing with diaphragm instead of the chest). Repeat about 15 times.	Check for correct breathing by holding hand at upper abdomen and feeling it rise and fall while chest is still. Encourage diaphragmatic breathing at all times.

PROCEDURES	KEY POINTS AND PRECAUTIONS
B. Have student raise arms over head while breathing in, and have student lower arms while breathing out. Repeat about 15 times.	Maintain breathing pattern while performing this exercise. Encourage this type of breathing in functional activities, such as combing hair, lifting, and so forth.
C. Have student extend arms outward while breathing in, and have student put arms across chest while breathing out. Repeat about 15 times.	Maintain breathing pattern while performing this exercise. Encourage slow expiration.
D. Encourage student to use prolonged expiration; i.e., pursed lip breathing. Repeat several times.	This assists students in emptying the lungs.
E. Assist student in progressive relaxation, using several techniques: a. Imagery (Think of pleasant thoughts such as the beach, fresh air, and so forth.) b. Autogenic phrasing (Feel hands getting warm and heavy to promote relaxation, and so forth.) c. Progressive muscular relaxation (Contract right arm. relax right arm. repeat for left arm, and so on.)	This procedure assists students to minimize asthmatic attacks or other respiratory distress symptoms. Progressive relaxation is used along with appropriate physician's recommendations.
6. At the end of each day, close liner from wastebasket and secure tightly before disposal.	
7. Record procedure on log or permanent health card.	

INTERMITTENT CATHETERIZATION

A. Pupils with neurogenic bladder are able to maintain continence, avoid infection, and remain socially acceptable in the classroom through the use of intermittent catheterization.

B. The frequency of the catheterization and of instillation of antiseptics will be recommended by the physician.

C. Equipment and supplies should be kept in a separate container or covered box and should include:

soap (Ivory is mild and nonirritating)
tap water
cotton balls (need not be sterile)
water soluable lubricant jelly (such as K-Y. NOTE: Vaseline is not water soluable)
2 cup measure
catheter (size determined by physician)
syringe (for instillation of medicine as prescribed by the physician)
instillation solution and measuring cup

D. Procedures for catheterization

PROCEDURES	KEY POINTS AND PRECAUTIONS
1. Wash hands with soap and water	Maintain breathing pattern while
2. Gather equipment needed.	Position equipment for easy reach utilizing tray or shoe box suggested.
3. Cleanse the genitalia.	Position the child lying down, or, for an older child, sitting. Wash with the soapy cotton balls. Start from the urethral opening and move outward. Do this three times, utilizing a clean cotton ball each time.
4. Rinse with cotton ball and water.	Utilize the same motion as cleansing.
5. Apply lubricant. jelly.	Apply a generous amount of lubricant jelly into and around the urethral opening or to the catheter.

PROCEDURES	KEY POINTS AND PRECAUTIONS
6. Insert the catheter.	Grasp the catheter approximately four to five inches from the tip. Insert into the meatus until urine flows. Then have child roll to side and/or sit up to be sure the bladder is empty.
7. Instillation (if recommended by physician).	With each catheterization, there are some organisms which are introduced via the urethra; the instillation solution kills these organisms. Measure instillation solution into the syringe as a part of the preparation. After the urine has stopped flowing, insert the syringe tightly into the catheter opening and gently push the solution into the bladder. Pinch catheter off and gently remove, allowing the solution to remain in the bladder.
8. Gently remove the catheter and wash carefully.	Wash the catheter with soap and cool water immediately after use. Utilize the syringe to force the soapy water and rinse water through the catheter. Lay on a clean surface to air dry. Once daily place the catheters in a pan and cover with water. Boil for 10 minutes.

NOTE: If silver nitrate solution is used, remember that this material stains everything—clothing, counter tops, etc.--so be sure to provide protection by using pads under the child. We know of nothing to remove the stains after they have occurred. You may observe some black flecks like pepper in the child's urine. This is the result of the silver nitrate working and causes no harm.

INSERTING NASOGASTRIC TUBE

I. General Guidelines

A. Purpose

The purpose of inserting a nasogastric tube is to administer medications and feeding (gavage) directly into gastrointestinal tract.

B. Equipment

1. Nasogastric tube--usually Levin's tube (rubber or plastic, 12 to 18 feet (3.65 to 5.48 m)--that is disposable. (Plastic tubes are less irritating than rubber.)
2. Water-soluble lubricant
3. Clamp for tubing
4. Towel and emesis basin
5. Glass of water

II. Procedure

A. Explain procedure to pupil and tell him or her how mouth breathing and swallowing can help in passing the tube.

B. Have pupil in a sitting or high Fowler's position, with neck slightly flexed; place a towel across his or her chest.

C. Determine with the pupil what sign he or she might use. such as raising index finger, to indicate "wait a few moments" because of gagging or discomfort.

D. Insert tube through nose only. With rubber tubing, place in ice water to make tubing firm. With plastic tubing, dip in warm water to soften.

E. Mark distance tube is to be passed by measuring.

INSTRUCTIONS: Measure the distance on the tube (1) from the patient's ear lobe to bridge of nose; and (2) from the bridge of the nose to the bottom of the ziphoid process. Total these two measurements and mark this total distance on the tube with a piece of adhesive tape. Refer to basic nursing text for further details.

Procedure	Key Points and Precautions
1. Lubricate about 6 to 8 inches (15 to 20 cm) of tube with water-soluble jelly.	Lubrication reduces friction between mucous membrane and tube.

2.	Lift head before inserting tube into nostril and pass it gently into the posterior nasopharynx aiming downward and backward.	Passage of tube is facilitated by following the natural contours of the body.
3.	When tube reaches the pharynx, the pupil may gag; allow him or her to rest for a few moments.	Gag reflex is triggered by the presence of the tube.
4.	Have pupil hold head in normal position, and offer him or her several sips of water sucked through a straw. Advance tube as pupil swallows.	Normal head position makes swallowing easier.
5.	Continue to advance tube gently each time pupil swallows.	Swallowing facilitates passage of tubing.
6.	If obstruction appears to prevent tube from passing, do not use force. Rotating tube gently may help. If unsuccessful, remove tube and try other nostril.	
7.	If there are signs of distress, such as gasping, coughing, or cyanosis, immediately remove tube.	Paroxysms of coughing would indicate that the tube is in the trachea.
8.	To check whether the tube is in the stomach:	
	a. Aspirate contents of stomach with a 20 ml syringe.	Aspirated stomach contents would indicate that the tube is in the stomach.
	b. Place end of tube in a glass of water.	
	c. Place a stethoscope over epigastrium, inject 5 ml of air into tube and listen for the sound of air entering the stomach as the air is injected into the tube.	Air bubbles will indicate the tube is in bronchus rather than stomach.
	d. Adjust tubing after these tests to determine proper position in the stomach.	
9.	Follow-Up Phase	
	a. Anchor tube with hypoallergenic tape.	
	(1) Prevent pupil's vision from being disturbed.	
	(2) Prevent tubing from rubbing against nasal mucosa or causing pressure on nares.	
10.	Record procedure on daily log.	

TUBE FEEDING: TUBE-SYRINGE METHOD—NASOGASTRIC/GASTROSTOMY

A. Purpose

To provide adequate fluids, nutrition, and/or medication for an individual who is unable to swallow safely.

B. Equipment

1. 50 cc syringe with catheter tip
2. Container with prescribed formula at room temperature
3. Container with water
4. Prescribed medications
5. Stethoscope
6. Twill tape
7. Catheter plug or clamp

PROCEDURES	KEY POINTS AND PRECAUTIONS
A. Preparation of Pupil	
1. Explain procedure to pupil.	
2. Position in order of preference:	
a. Right side	Placement on right facilitates emptying of stomach contents into small bowel.
b. Left side	Placement on left side creates a pooling of the stomach contents in the stomach.
c. Supine	Stomach empties by peristalsis rather than gravity. Greater danger of regurgitation. If nasogastric tube is displaced, there is less possibility of food entering the trachea.
3. Elevate student to a 30 to 45 degree angle for all positions unless contraindicated.	The elevation helps prevent vomiting.
B. Preparation	
Collect equipment and bring to student.	Good organization saves time and energy.
C. Method	
Test for tube placement (nasogastric tube).	
1. Wash hands.	

PROCEDURES	KEY POINTS AND PRECAUTIONS
2. Methods to check for correct tube placement:	If it has been more than four hours since last feeding, stomach may be empty; therefore, use another method of checking for placement of tube.
a. Aspirate through the tube to obtain stomach contents.	If more than 100 cc are aspirated, hold tube feeding and turn student to right side to facilitate emptying of contents into small bowel.
OR	
b. Place stethoscope below xiphoid process of sternum and listen while introducing 10 to 15 cc of air with syringe (not applicable for gastrostomy tube).	A bubbling or swooshing sound is heard when tube is in the stomach; if no sound is heard, tube may be in lungs; call nurse supervisor immediately. Do not give feeding.
OR	
c. Place tip of feeding tube in cup of water and observe for bubbles (not applicable for gastrostomy tube).	Bubbles on expiration indicate tube may be lung. Do not give feeding. Call nurse supervisor immediately. He or she will evaluate the student and will clamp and remove the nasogastric tube if indicated.
D. Administration of Feeding	
1. Check formula expiration date.	
2. Attach syringe barrel to feeding tube, keeping tube clamped. Pour fluid in syringe.	Collection of air in the tube will be kept to a minimum in this manner.
3. Hold syringe 3 to 6 inches (7.6 to 15.2 cm) above stomach level. Unclamp tube.	This helps regulate the rate of flow of solution.
4. Continue to add feeding, and keep solution in syringe at all times until feeding is completed.	This prevents air from entering stomach during feeding. Pinch tube off should student vomit or regurgitate during feeding. If tube should slip out partially during feeding, STOP FEEDING IMMEDIATELY and check for tube placement before proceeding with feeding. If you are unsure of tube placement, clamp tube and discontinuefeeding. Call nursing supervisor.
5. Allow fluid to flow slowly into tube until feeding is completed.	This prevents regurgitation, vomiting, and/or diarrhea.
6. Rinse tube with at least 20 to 50 cc of water.	By cleaning tubing, you prevent dried particles from obstructing tube.

PROCEDURES	KEY POINTS AND PRECAUTIONS
7. Allow some of the water to remain within tube, and plug nasogastric tube.	This prevents air from being introduced into stomach at next feeding.
E. Care of Student	
1. Post-feeding care	
a. Allow student to remain elevated for 20 minutes after feeding.	This helps prevent vomiting and/or aspiration should student regurgitate.
b. Student may be positioned on right side for 20-30 minutes after feeding.	This positioning facilitates emptying of stomach contents into small bowel.
2. Observe for student reaction, such as restlessness, color change, or distended adbomen.	Report to nursing and/or medical supervisory personnel and take appropriate action.
2. Daily care	
a. Nasogastric tube	
(1) Give oral hygiene daily.	Oral hygiene is necessary to prevent accumulation of secretions.
(2) Clean and lubricate nostrils as needed.	This prevents irritation of nasal mucosa.
(3) Check skin along twill tape daily.	This prevents pressure areas especially over the ear.
b. Gastrostomy tube	
(1) Give oral hygeine daily.	Oral hygeine is necessary to prevent accumulation of secretion.
(2) Cleanse area around gastrostomy tube daily.	To prevent skin irritation and excoriation from gastric juices.
(3) Apply dry sterile dressing, if indicated.	The dressing absorbs any discharge of gastric juices and prevents any skin breakdown.
F. Care of Equipment	
1. Plug nasogastric or gastrostomy tube.	Use of clamps on nasogastric tube or gastrostomy tube may cause pressure areas should student lie on them.
2. Wash and rinse all equipment after each feeding.	To prevent accumulation of formula and growth of bacteria, clean the equipment.
G. Documentation	
1. Record procedure.	
2. Note pupil reaction.	

TRACHEOSTOMY: CARE AND CLEANING OF TUBE AND STOMA

SPECIAL NOTE

All pupils needing tracheostomy care have the potential of presenting a life-threatening respiratory emergency. Therefore, a qualified, trained staff person should be on site at all times to perform and direct emergency procedures of this type.

A. Purposes

1. To maintain airway by keeping inner cannula open and free of secretion and exudate
2. To prevent infection
3. To prevent irritation of tissue around tracheostomy tube
4. To maintain airway when there is:
   a. Labored or interrupted breathing
   b. Excessive discharges or mucous plugs
   c. Restlessness and/or apprehension
   d. Dry, crusty secretions around tracheostomy tube

B. Equipment

1. Small disposable tray
2. Paper cups
3. Cotton-tipped applicators
4. Hydrogen peroxide solution, full strength
5. Pipe cleaners and/or plastic drinking straws
6. Gloves (clean, vinyl disposable)
7. Twill tape, tracheal ties
8. Antimicrobial ointments, if ordered by physician
9. Sterilized tracheostomy dressing, if indicated
10. Adhesive tape, if needed, to secure dressing
11. Paper bag for disposal of wastes
12. Paper towels
13. Suctioning supplies and equipment
14. Clean scissors if tracheal ties are to be changed
15. Dental floss for attaching tracheal plug
16. Sterile saline or water

PROCEDURES	KEY POINTS AND PRECAUTIONS
A. Preparation of Pupil	
1. Explain procedure to pupil and how he or she can assist.	If pupil is spastic, restless, agitated, or confused, he or she may need to be restrained during procedure.

Procedures	Key Points and Precautions
2. If student is on respirator, determine breathing tolerance when he or she is off respiratory equipment.	If ventilation is needed during cleaning, the following may be done: a. plug tracheostomy opening and student ventilates by glosso-pharyngeal breathing (GPB). b. Attach Elder Demand Valve or Ambu bag, to fit outer cannula. c. Two persons may be needed to complete procedure.
3. Position student with tracheostomy area exposed.	Elevating head provides drainage of cleansing solution on the chest rather than into tracheal opening.
B. Preparation of Equipment	
1. Assemble supplies and take to student.	
C. Method	
1. Wash hands.	
2. Set out three paper cups.	
3. Fill one cup with hydrogen peroxide and one with sterile saline.	Normal saline may be used instead of hydrogen peroxide, if indicated.
4. Place two to four cotton-tipped applicators in third cup.	
5. Put on gloves.	
6. Remove soiled gauze dressing, if used.	Removing soiled dressing reduces contaminates at area to be cleaned.
7. Discard dressing in paper bag.	
8. Using applicator moistened with hydrogen peroxide, cleanse stoma at least 1 inch (2.54 cm) beyond outer cannula.	Do not wipe over area more than once with the same applicator. Cleanse area next to tube first and proceed outward, using circular motion.
9. Discard used applicators into paper bag.	
10. Using dry applicator, wipe cleansed area, drying thoroughly.	Rinsing off hydrogen peroxide is not necessary.
11. Unlock and remove inner cannula, holding outer cannula in place.	If smaller size inner cannula is difficult to remove, use disposable forceps.
12. Place inner cannula in paper cup filled with hydrogen peroxide.	Be sure cup is filled to completely cover inner cannula.

PROCEDURES	KEY POINTS AND PRECAUTIONS
13. Soak inner cannula in peroxide (1 to 5 minutes). NOTE: Sequence of above steps may be altered if inner cannula requires longer time to soak to remove tenacious mucus. Begin with step 11 and continue through 14 and follow with cleaning stomal area (steps 7-11).	Remove mucus by bubbling action.
14. Take out paper towel from dispenser and lay on flat surface.	
15. Set paper cup and pipe cleaners on paper towel.	
16. Cleanse inner cannula with pipe cleaners and/or plastic drinking straw.	Using two pipe cleaners or doubling end of pipe cleaner provides more effective cleansing than using one.
17. Pour sterile saline or water into cup and allow inner cannula to soak a brief time.	
18. Remove cannula from cup and pour sterile saline or water over it until it is thoroughly clean.	
19. Shake out excess moisture; put in clean paper cup.	
20. Pour out any peroxide and saline and discard paper cup and pipe cleaners.	
21. Take off gloves and discard.	
22 Pick up paper cup with cannula and return to student.	
23. Suction outer cannula and airway according to appropriate suctioning procedure, if necessary.	
24. Replace inner cannula and secure in place.	Replace inner cannula as soon as possible after cleaning to prevent mucus plugs from forming in outer cannula.
25 Determine that student is ventilating adequately. Attach respirator prior to cleaning.	
26. Change weekly the twill tapes that secure tracheostomy tube and change at other times if necessary.	
27. Apply antimicrobial ointments as ordered by physician.	Indiscriminate use of ointments may increase bacterial growth.

PROCEDURES	KEY POINTS AND PRECAUTIONS
28. Apply gauze dressing if needed to help hold tracheal tube in position or to decrease air leak.	When secretions are copious, the dressings must be changed frequently and the area must be kept dry.
D. Care of Pupil	
1. Check that pupil is being adequately ventilated (ongoing procedure).	Student on ventilator should not be left alone or with untrained aide.
2. Check that tracheostomy tube is positioned properly.	
E. Care of Equipment	
1. Dispose of all supplies after use.	
2. Wash hands.	
F. Documentation	
1. Record procedure on log.	

TRACHEOSTOMY: CARING FOR PUPIL WITH A CUFFED TUBE

A. Purpose

The purpose of following these guidelines is to provide a snug fit necessary for controlled or assisted ventilation through the use of a cuffed tube, which is an inflatable attachment on a tracheostomy tube. This prevents leakage of air and secretions outside the tube as well as preventing the aspiration of secretions.

B. Equipment

1. Suction apparatus
2. Manual breathing bag
3. Appropriate sterile catheters
4. Sterile gloves
5. Sterile solution
6. 10 cc syringe
7. Stethoscope
8. Tube clamps

C. Special Considerations

1. Speaking may be possible for the student with a cuffed tracheostomy tube in place but not when the cuff is fully inflated.
2. Keep neck extended; when the student is in a sitting position, place pillows to maintain neck extension.
3. Hyperventilate student just before, during, and after the cuff is deflated and inflated to prevent hypoxia.
4. Recognize the importance of frequent and adequate mouth care

D. Personnel Recommendation

The procedure for caring for a pupil with a cuffed tube should be done only by the qualified school nurse or someone with specific training for this procedure.

PROCEDURES	KEY POINTS AND PRECAUTIONS
A. Deflating a Cuff	
1. Suction pharynx—oral and nasal.	This removes secretions which could be aspirated during the process of deflation.
2. Deflate cuff slowly	
3. Suction through the tracheostomy.	Removes secretions which may have been present above inflated cuff and around exterior of tube and now have seeped downward. The coughing reflex may be stimulated during deflation, which helps to mobilize secretions.

PROCEDURES	KEY POINTS AND PRECAUTIONS
4. Provide adequate ventilation while cuff is deflated. a. If the patient does not require assisted ventilation, provide humidified warm air.	Continue observation of student: pulse, color, and so forth. If any signs of distress appear, place student back on mechanical ventilator.
5. If the student requires assisted ventilation: Provide a manually inflating breathing bag or respirator if student has been on a mechanical ventilator.	If student is apneic, cuff should not be deflated more than 30 or 45 seconds.
B. Inflating a Cuff	
1. Stipulations: a. Inflating a cuff should be done SLOWLY when student requires mechanical ventilation or is being fed.	
(1) Semi-Fowler's position is most comfortable if permissible and for a half hour after feeding.	Gravity assists moving food into the stomach.
(2) Place student on right side.	To prevent regurgitation of feeding.
b. Inflate cuff during inspiration (positive pressure phase).	
2. Method A a. Inject air (approximately 2 to 6 ml) into cuff until a complete seal is achieved. By listening with a stethoscope placed just below chin (submental), one may determine that no leak exists if no air exchange sounds are heard.	If seal is inadequate, the pressure-cycled respirator will turn off. If seal is adequate, air will not escape around tube or from nose or mouth. In the conscious student, a leak-free system is present when he or she is aphonic.
b. Clamp tube leading to cuff.	
3. Method B (minimal leak inflation) a. Inject air until full seal is acquired; withdraw 0.5 ml of air and clamp tube.	A partial leak is purposely created so that respirator can be set to compensate for it. If at subsequent times, more air is

PROCEDURES	KEY POINTS AND PRECAUTIONS
	required to inflate cuff, it may indicate tracheal dilation or perhaps serious difficulty, i.e.. erosion of a large blood vessel or tracheoesophageal diverticulum or fistula.
C. Suctioning done with Sterile Equipment	This is a nursing judgment based on recognition of signs suggesting accumulation of secretions.
1. Tracheobronchial secretions are suctioned as frequently as necessary--5 or 10 seconds at a time and not oftener than once every 3 minutes.	This minimizes possibility of infection.
2. For information on the sterile technique for tracheostomy suctioning, consult a reliable nursing textbook or resource person.	
D. Maintaining Humidified Warm Inspired Air	
1. Provide continuous flow of mist.	This prevents drying of secretions and irritation of mucous membrane.
E. Recording Procedure	
1. Record procedure on daily log.	

TRACHEOSTOMY: EMERGENCY CLEANING OF INNER CANNULA

I. GENERAL GUIDELINES

This procedure is to be used only when a mucus plug is present and there is not enough time to follow the procedure, "Tracheostomy: Care and Cleaning Tube and Stoma," which was described earlier.

A. Purpose

1. To maintain airway by keeping inner cannula open
2. To clear airway when there is a mucus plug present
3. To relieve labored or interrupted breathing
4. To investigate signs of restlessness and/or apprehension

B. Equipment

1. Paper cups
2. Cotton tip applicators
3. Hydrogen peroxide
4. Pipe cleaners and/or plastic drinking straw
5. Gloves (clean, vinyl and disposable)
6. Paper bag
7. Suction supplies and equipment

C. Personnel Recommendation

The procedure for the emergency cleaning of the inner cannula should be done by the qualified school nurse or staff person with specific training in the procedure.

PROCEDURES	KEY POINTS AND PRECAUTIONS
A. Preparation of Pupil	
1. Explain procedure to pupil and how he or she can assist.	
2. If pupil is on a respirator, determine breathing tolerance when he or she is off respiratory equipment.	If ventilation is needed during cleaning, the following may be done: 1. Plug tracheostomy opening and pupil ventilates by glosso-pharyngeal breathing (GPB). 2. Attach Elder Demand Valve or Ambu bag to fit outer cannula. 3. Place the correct size adapter into outer cannula and secure with spring or rubber band. 4. Two persons may be needed to complete procedure.
3. Position pupil with tracheostomy area exposed.	

PROCEDURES	KEY POINTS AND PRECAUTIONS
B. Care of Pupil	
1. Check that pupil is being adequately ventilated.	Be sure to suction thoroughly; auscultate to determine adequate aeration in all lobes of the lungs. Postural drainage and percussion may be needed to dislodge mucus plugs.
C. Preparation of Equipment	
1. Assemble supplies on a small disposable tray and take to pupil.	
D. Method	
1. Wash hands.	
2. Set out three paper cups.	
3. Fill one cup with peroxide and one with sterile saline.	
4. Put on gloves.	
5. Unlock and remove inner cannula.	If smaller size inner cannula is difficult to remove, use disposable forceps.
6. Place inner cannula in cup with peroxide to soak.	Be sure cannula is completely covered with solution.
7. Cleanse inner cannula, using pipe cleaners and/or plastic drinking straw.	Using two or more pipe cleaners provides more effective cleansing than one.
8. Place inner cannula in cup with sterile saline or water.	
9. Remove cannula and pour saline over it until clean.	
10. Shake out excess moisture and place cannula in clean cup.	
11. Suction outer airway if necessary.	
12. Replace inner cannula and secure in place.	
13. Attach respirator if removed prior to cleaning.	
14. Dispose of all used supplies.	
15. Wash hands.	
16. Record procedure on log.	

INSTRUCTIONS FOR REDUCING RECTAL PROLAPSE

Where possible, rectal prolapse should be reduced as soon as possible. The staff member reducing the prolapse should use gloves and K-Y jelly. This is a two handed job carried out with the pupil side lying and curled up. An alternative position would be to have the pupil kneel across a stool or chair. Three or four fingers are held over the prolapsed rectum at the apex of the prolapse. With the fingers of the other hand guiding the mucosa into the anal orifice, the prolapse is reduced with a steady gentle pressure. Once the prolapse has returned to a point within the anal orifice, the index finger is then inserted and swept around the rectal vault to insure that the prolapse is completely reduced and the rectal wall is not folded upon itself. If the pupil continues to strain and try to have a bowel movement, then the finger is retained in the rectum for a minute or two until the pupil no longer feels an urge to pass stool. This usually only takes a minute or two. If the straining persists after three or four minutes with the finger in place, then the finger can be withdrawn and the buttocks held together with a two hands and then strapped together. This strapping would need to be performed tightly enough to ensure that the rectum does not prolapse around the strapping.

Physician's Authorization for Having Specialized Physical Health Care Service Procedures Administered

1. Name of pupil _____ Birth date _____

2. Address _____

3. Physical condition for which the standardized procedure is to be performed:

_____

4. Name of standardized procedure _____

_____

5. Check one:

_____ I reviewed and approved the attached standardized procedure as written.
_____ I reviewed and approved the attached standardized procedure with the attached modifications.
_____ I do not approve of the school's standardized procedure and, therefore, have attached my alternate written recommendations.

6. Precautions, possible untoward reactions, and interventions: _____

_____

_____

7. Time schedule and/or indication for the procedure _____

_____

8. The procedure is to be continued as above until _____
(Date)

Physician's signature: _____ Date _____ 19___

Address _____ Telephone _____

.....

To Whom It May Concern: _____
(Date)

I hereby give my permission for exchange of confidential information contained in the record of my child.

_____
(Name) (Birth date)

between _____ and

_____

_____
(Signature of parent/guardian)

Daily Log of Treatment Administered SAMPLE

Name _____ Birth date _____ School _____

Procedure _____ From _____ 19__ To _____ 19__

Physician _____ Phone _____

Date / /			Date / /			Date / /		
Time	Comment	Init.	Time	Comment	Init.	Time	Comment	Init.
Date / /			Date / /			Date / /		
Time	Comment	Init.	Time	Comment	Init.	Time	Comment	Init.
Date / /			Date / /			Date / /		
Time	Comment	Init.	Time	Comment	Init.	Time	Comment	Init.
Date / /			Date / /			Date / /		
Time	Comment	Init.	Time	Comment	Init.	Time	Comment	Init.
Date / /			Date / /			Date / /		
Time	Comment	Init.	Time	Comment	Init.	Time	Comment	Init.

Signatures	Title	Date

Directions:

Use one sheet per procedure and attach the standardized procedure to each sheet.
Person administering specialized physical health care shall initial in space daily and include identifying signature at bottom of page only one time.
If student is absent or if for any reason procedure is not done, indicate in "comment" column.
This form shall be included in student's cumulative health record.
Additional comments should be entered on the back of the sheet.
Person supervising the procedure is to sign on days he or she is present in "signature" spaces at bottom.

MEDICATIONS

MEDICATION IN SCHOOL

Administering legally prescribed drugs or over-the-counter medications within the school setting has become a primary concern for educators because of the increase in the number of pupils requiring medications during school hours.

The Iowa Department of Education Rules of Special Education regarding the administration of medications are very specific for handicapped students. The rules spell out requirements for physician's orders, parent written permission, container and labeling of the medication, storage, and documentation of administration. [670-12.23(281)]

A copy of the complete rules will be found in the following pages. In addition, Chapter 204 of the Code of Iowa designates to the Iowa Board of Pharmacy the responsibility of determining who can legally administer medications. In response to this, the Board of Pharmacy developed a course of instruction to teach nonlicensed school personnel the standards, procedures, and regulations for administration of nonparenteral medications. The course may be taught by the SEN and is required for teachers or other staff persons who will be responsible for giving medications at school.

Each AEA and/or LEA should also be responsible for developing rules and policy statements for the transportation of medications to and from school and for the use of emergency medications such as injectibles and rectal suppositories (especially Valium).

For resource information specific to rectal Valium Special Education Nurses are urged to contact Gillette Children's Hospital, St. Paul, Minnesota. Further information regarding the administration of medications in the school is available through the American Academy of Pediatrics, PO Box 1034. Evanston, Illinois, 60204.

Any time a pupil is on medication the teacher and support staff should be aware of the medication, the expected response, and the possible side effects so that positive or adverse effects may be communicated to the Special Education Nurse who serves as a liaison between the pupil and the physician.

Samples of forms used for physician and parent permission and documentation of administration are included in this section.

MEDICATION ADMINISTRATION

670--12.23(281) Medications. Each agency shall establish written policies concerning the administration of prescribed medication by school personnel during school hours. Medications shall not be administered unless the following requirements are met:

12.23(1) Directed by physician. A statement of the physician's directions specifying frequency, amount, and method of administration signed by the prescribing physician must be filed at the school.

12.23(2) Reactions and side effects. A physician's description of anticipated reactions to and possible side effects of the medicine must be filed at the school.

12.23(3) Proper labeling. The medicine shall be maintained in the original prescription container which shall be labeled with:

a. Name of pupil.
b. Name of medicine.
c. Directions for use.
d. Name of physician.
e. Name and address of pharmacy.
f. Date of prescription.

12.23(4) Parent's written consent. A parental signature on a statement requesting and authorizing school personnel to administer the medicine in accord with the prescription shall be filed at the school.

12.23(5) Administering medication. The person responsible for administering the medication shall have ready access to and review of the information regarding the medication filed at the school.

12.23(6) Record of administration. Each time medicine is administered a record shall be maintained to include the pupil's name, date, time, and signature of the person administering the medication.

12.23(7) Security. Each school or facility shall designate in writing the specific locked and limited access space within each building to store pupil medication.

a. In each building in which a full-time registered nurse is assigned, access to medication locked in a designated space shall be under the authority of the nurse.

b. In each building in which a less than full-time registered nurse is assigned, access to the medication shall be under the authority of the principal.

Source: Rules of Special Education (1985). State of Iowa, Department of Education.

ADMINISTRATION OF
OVER-THE-COUNTER MEDICATION*

On July 12, 1985, the Iowa State Board of Nursing issued a Declaratory Ruling in response to a request by Carol Hinton, R.N., school nurse from West Des Moines School District.

A Declaratory Ruling is a formal, legal, and binding decision to a specific circumstance or question. However, it also establishes a precedent in subsequent and similar cases.

The Declaratory Ruling stated:

> The Iowa Board of Nursing has determined that the Code of Iowa and the Iowa Administrative Code do not forbid administration of over-the-counter medications by a registered nurse.
>
> The registered nurse, using education and experience, may determine that the use of over-the-counter medication, ordered by a parent, is the appropriate care for some children. Thus, the registered nurse may follow a parent's direction to give such a medication.
>
> However, the registered nurse may also determine that an over-the-counter medication, ordered by a parent, could be detrimental to the child. In this case the registered nurse may refuse to administer the medication and state the reasons, in writing, to the parent.

*Applicable to Registered Nurses only.

ADMINISTRATION OF RECTAL VALIUM

Administration of rectal valium for status epilepticus has become an accepted treatment, and the question of administration in the school setting needs to be addressed.

It is recommended that policies for giving rectal valium in the school setting be established by each school district with consideration of the following areas:

1. Evaluating appropriateness of administering medication in school versus hospital.

2. Developing procedures with cooperation of the parent/caretaker. physician, hospital/trauma center, and school personnel.

3. Validation that test dose has been administered to the child to determine sensitivity to the drug.

4. Consideration of details, such as transportation to trauma center, notification of parent/guardian, medical orders in place, monitoring of vital signs, emergency equipment available in case of anaphylactic reaction, or lack of response to medication.

DIRECTIONS FOR GIVING RECTAL VALIUM

Equipment

1. A syringe of appropriate size for age and size of child and dosage amount (i.e., tuberculin for 1 cc or less, 3 cc under age 3 years, 5-6 cc maximum size). Syringe should have taper tip end (Luer lock ends are difficult to insert and may cause injury).
2. Needle, size appropriate for syringe and drawing medication from vial in ampule.
3. Valium ampules (10 mg or 2 cc vial). Dosage may require multiple ampules.
4. Lubricant such as lubrifax, KY jelly.
5. Tape, optional (may be needed to tape buttocks for retention of medication).

Procedure

1. Put the syringe and needle together.
2. Shake all of the Valium into the bottom of the container.
3. Break off the top of the Valium container.
4. Draw up all of the Valium in the syringe. Holding the syringe upright with the needle on top, push out any excess Valium until you have correct dosage in the syringe. TAKE THE NEEDLE OFF THE SYRINGE.
5. Lubricate the syringe.
6. Gently slide the syringe into the rectum about 2 inches. You will notice some resistance as the syringe slides past two rectal muscles.
7. Give the valium. Hold the buttocks together and remove the syringe. Continue holding the buttocks together tightly for the next 10 to 15 minutes. Sometimes you can use adhesive tape across the buttocks to hold them together.
8. After giving the medicine, stay with the person to continue seizure observation and provide first aid. Watch for any slowing in breathing rate and note effect of medication on seizure activity.

FROM: Gillette Children's Hospital
200 East University Avenue
612/291-2848

References

Refer to Resources

SAMPLE
MEDICATION POLICY

A. An Area Education Agency authorization form signed by the parent or legal guardian must be on file for each medication to be given during school hours.

B. Only medications prescribed by a physician will be given at school. Exception: In special circumstances and after consultation between parent/guardian and the school nurse, certain nonprescription drugs may be given for short-term therapy (e.g., antihistamines. antitussives, anti-pyretics, etc.).

C. All prescription medication must be kept in the original pharmacist's container, with the original label attached, and must include:

1. name of pupil
2. name of medication
3. strength and dosage prescribed
4. name of physician
5. name and address of pharmacy
6. date of prescription

D. All medications will be kept in a closed, locked container Only the school nurse or staff delegate(s) will have access to the container. Any staff member administering medication will have knowledge of:

1. reason for medication
2. usual dosage
3. mode of administration
4. possible side effects

E. A written record of the administration of each medication will be maintained. This record will include:

1. student's full name
2. name and strength of medication
3. dosage and time of adminstration
4. date given and name of person administering
5. pertinent observations (seizure, elevated temperature, etc.)

SAMPLE PARENT LETTER

Dear Parent:

The Iowa Department of Public Instruction's Rules of Special Education are very specific regarding the administration of medication by the school.

If your child needs medication during school hours, you must make sure that 1) the Statement of Physicians Directions and Parental Consent form is filled out and signed by both you and the doctor and 2) the medication is sent to school in a prescription bottle.

The Statement of Physicians Directions and Parental Consent form can be obtained from the school nurse. This form must be completely filled out and signed by the doctor. You must then sign on the bottom line giving your consent for the school to administer medication.

When sending the medication to school, you must make sure it is in a prescription bottle. The bottle must be marked with 1) name of pupil, 2) name of medication, 3) name of physician, 4) directions for use, 5) name and address of pharmacy, and 6) date of the prescription. If you are also giving the medication at home, simply ask the pharmacist to make up two prescription bottles and divide the medication between the two. Then you can keep one at home and send one to school.

If you have any questions regarding this policy, please contact your school nurse. Thank you for your cooperation.

Sincerely,

_____

Special Education Nurse

SAMPLE LETTER TO PHYSICIAN

Dear Dr. _____

According to the Iowa Department of Public Instruction's Rules of Special Education, a statement of the Physician's Directions must be on file for each child receiving medication given by school personnel during school hours. The directions must include frequency, amount, method of administration, and a description of anticipated reactions of the pupil to the medication. Also, according to the rules, the medication is to be maintained in the original prescription container which shall be labeled in the following way:

1. Name of Pupil
2. Name of Medication
3. Name of Physician
4. Directions for use
5. Name and address of pharmacy
6. Date of prescription

According to our records, you are the physician for _____ who is receiving _____ while in school. With a new school year beginning, we must have a statement of physician's directions for school administration of the medication to meet the requirements of the Rules of Special Education. After you complete the Physician's Statement, it is submitted to the parent(s) so they are aware of the directions you wished to have followed. It is then placed on file in the student's record at school. We appreciate your cooperation in this matter.

Enclosed you will find a medical release form signed by the parent.

Sincerely,

_____
Special Education Nurse

SAMPLE

STATEMENT OF PHYSICIAN'S DIRECTIONS AND PARENTAL CONSENT
FOR SCHOOL ADMINISTRATION OF MEDICATIONS

NAME OF STUDENT _____ AGE _____

NAME OF PARENTS AND/OR GUARDIANS _____

ADDRESS _____

ATTENDANCE CENTER _____

NAME OF MEDICATION _____

FREQUENCY AND AMOUNT _____ TIME SCHOOL DOSAGE IS TO BE GIVEN: AM ___ PM ___

METHOD OF ADMINSTRATION _____

ANTICIPATED REACTIONS OF THE STUDENT TO THE MEDICATION _____

_____

_____

_____

HOW FREQUENTLY SHOULD THIS MEDICATION BE MONITORED BY A PHSYICIAN _____

_____

_____
Signature of Prescribing Physician

_____
Address of Prescribing Physician

Please give to the above mentioned child the medication as directed above during school hours. It is understood that this relieves the teacher of all liability in administering this medication; providing directions are carefully followed. The teacher is merely carrying out the physician's recommendations.

Parent and/or Guardian's Signature _____ Date _____

PARENTS' COMMENTS:

For School Use:
1. Parent release signed _____
2. Person designated for administration _____

Source: Arrowhead AEA 5
Fort Dodge, IA 50501

SAMPLE

MEDICATION RECORD

Student: _____ Month/Year _____

Medication: _____
Name Strength Unit

Dosage: _____ Time: _____

Date	Given by: (signature the first time)	Comments: (seizures, behavior changes, etc.)

Source: Monroe Developmental Center
Cedar Rapids, IA 52403

SAMPLE

CLIENT FACILITY MONTH

MEDICATION	ROUTE	DOSE	PILLS	TIME	DATES IN MONTH 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

FULL SIGNATURE	INITIAL	ABBREVIATIONS	ROUTES OF ADMINISTRATION	
		N = NEW MEDICATION	PO = BY MOUTH	GTT = DROPS
		T = TERMINATION OF MEDICINE	IM = INJECTION	OU = BOTH EYES
		A = ABSENT	SQ = SUBCUTANEOUS	OD = RIGHT EYE
		A = MED NOT GIVEN (see below)	R = RECTAL	OS = LEFT EYE
		X = NO SCHOOL	TOP = TOPICAL	E = EAR

EXPLANATION OF MEDICINE NOT GIVEN - A

DATE	REASON CLIENT DID NOT RECEIVE MEDICINE	PROPER NOTIFICATION	INITIAL

175

SAMPLE

SCHOOL DISTRICT NAME
BUS DRIVER FORM

Date _____

Pupil's Name _____

Medication in sealed, labeled Pharmacy Container _____ bottle
box
vial

Received from _____
Parent's or Guardian's Signature

Received by _____
Bus Driver's Signature

Released to _____
School administrator or appointed school personnel

This form is used only when parents or guardian cannot arrange to bring medication to school. The request to give medicine at school must be completed for each pupil receiving medication at school regardless of who brings the medication to the school building.

Pupils who require prescribed medication and who are eligible for Title XIX medical assistance, will have a specific request form completed before the prescription can be filled.

The parents or guardian of these children who expect to have a prescription refilled should initiate the procedure about two weeks before the expected date of refill to assure continuity in the medical regimen.

COMMUNICABLE DISEASES

CONTROL OF COMMUNICABLE DISEASE

The transmission of infectious diseases may be prevented or decreased by utilizing proper handwashing, diapering, and classroom cleanliness and by monitoring the actions of suspected and known carriers. Teaching and supervising staff in preventive measures for control of infectious disease is a nursing function.

The following diseases have recently caused much concern in the educational setting:

Herpes
CMV
AIDS and its related complex ARC

A section including questions about these diseases and recommendations for providing education to students who may have the diseases will follow.

Further information may be obtained from the following documents regarding communicable disease as well as other resources listed in the reference section of this manual:

1. "Control of Communicable Diseases in Man" by Abraham S. Benenson.

2. "Control of Communicable Diseases in Schools" - Iowa State Department of Health.

3. "Medical Aspects of Developmental Disabilities in Children Birth to Three" by James A. Blackman, M.D.

4. Communicable Diseases and the Enrolled Student; A Model Policy and Rules (1986), Iowa Department of Education 1160-F09834-12/85.

The following pages include information and the suggested approach for educational personnel in regard to viral infections as developed by James F. Bale, Jr., M.D., James A. Blackman, M.D., Jody Murph, M.D., Department of Pediatrics and Neurology, University of Iowa College of Medicine, Iowa City, Iowa.

HERPES SIMPLEX VIRUS INFECTIONS: INFORMATION AND A SUGGESTED APPROACH FOR EDUCATIONAL PERSONNEL

1. What is herpes?

Herpes simplex virus (HSV) belongs to the herpes virus group which also includes Varicella-Zoster (chicken pox-shingles virus), cytomegalovirus (CMV), and Epstein-Barr (infectious mononucleosis) virus. These viruses are grouped together because of a common structure. HSV is the herpes virus relating to this suggested approach.

In newborn infants, HSV produces a spectrum of illness ranging from localized skin lesions to a generalized, systemic (throughout the entire body) infection which may be fatal or cause permanent neurological damage. In adolescents or adults, genital HSV is seen most commonly. Patients with eczema who are infected with HSV may develop a generalized rather severe secondary infection of the eczematous areas (eczema herpeticum).

The most commonly recognized manifestation of primary HSV infection beyond the neonatal period, gingivo-stomatitis (inflammation and ulcers throughout the mouth), usually occurs in infancy; but, on occasion, it may be seen in older children or adolescents. Clinically, gingivo-stomatitis is characterized by fever, irritability, and a rash involving the mucous membranes of the mouth, particularly the gums. However, most infections are subclinical (that is, they are often inapparent to either the child or others). HSV tends to persist in a latent (resting or hidden) form following primary infection. Recurrences of oral HSV infection because of reactivation of latent virus are most often manifested as "cold sores." These cold sores occur as single or grouped vesicles (water blisters) on or around the lips. Reactivation of genital HSV may occur also.

Eye infections may be a primary manifestation of HSV infection or recurrence. It may vary in severity from a superficial conjunctivitis (inflammation of the thin covering of the inside of the eyelids and "whites" of the eyes) to the involvement of the deep layers of the cornea. Encephalitis (inflammation of the brain) is a rare presentation of HSV infection affecting all age groups. Herpes encephalitis may produce alterations in state of consciousness and personality changes, or convulsions.

Herpetic whitlows are single or multiple vesicular (blister-like) lesions, on the fingers usually around the nail bed.

2. What are the two types of herpes simplex virus?

There are two types of HSV: Type I (most oral lesions) and Type II (most genital lesions). HSV is transmitted from person to person. Type I infection is believed to result from direct contact, but the

exact mode of transmission has not been established. Type II infection is usually a sexually transmitted disease. Type I strains may also be found in the genital tract, and Type II infections of the pharynx can occur as a result of oral-genital sexual activity. Genital type HSV is usually contracted after puberty.

Most neonatal infections are Type II. Neonatal HSV is contracted by the infant during passage through an infected lower genital tract at birth. Type I infection may also be contracted during the first years of life. Immunocompromised individuals (e.g., those receiving cancer treatment) are prone to develop frequent recurrences of herpes simplex or severe disseminated disease. HSV infections are ubiquitous and occur throughout the year. Most infections with Type I virus and many with Type II virus are subclinical (inapparent).

The period of communicability of patients with primary gingivo-stomatitis (Type I HSV) is unknown, but it is likely that the risk of transmission drops significantly or disapears when the mouth sores have healed. The same is true of patients with subsequent recurrent lesions. The virus is present in the highest concentrations in the first twenty-four hours after appearance of vesicles. Concentrations of virus decrease rapidly in the next twenty-four hours and cannot be recovered after five days. The incubation period (the period after exposure but before clinical manifestation of the disease) is usually about four days.

The recurrent skin lesions following neonatal HSV infection are infectious until they are crusted over (usually three to four days after initial appearance).

There are basically two types of children with HSV infections: the infant who contracted herpes neonatally (most likely Type II) and the child who has a primary HSV Type I infection. The child with neonatal herpes may have recurrences (usually on the skin) ranging from months to years after birth. However, the recurrences typically become less frequent as time goes on. The child with primary HSV Type I will typically have an infection in the mouth which is frequently asymptomatic, and the recurrence will be in the form of cold sores. For all practical purposes, the precautions and recommendations regarding a child with HSV I or HSV II are identical.

3. What is the prevalence of herpes simplex infection?

The exact incidence of primary herpes simplex infections in children is difficult to determine since many of the infections are asymptomatic. There are no satisfactory epidemiologic surveys available. It should be noted that most HSV infections in children below the age of puberty are Type I and that Type I HSV infections usualy occur before age five. HSV II is rare before adolescence. Among adults, 70-90 percent have antibodies (evidence of previous exposure and infection) against HSV Type I and 20 percent against HSV Type II. Up to 60 percent of adults in low socioeconomic status settings have antibodies to HSV Type II.

4. Who is most at-risk with herpes simplex infection?

Neonates (infants 28 days of age or less) who contract HSV infection have a considerable risk of severe illness and even death or lifelong neurological disability. Beyond this period, the risk is considerably reduced. It is unlikely that other than during the birth process infants and young children will be exposed to HSV Type II (except through sexual activity with an infected individual).

Beyond one month of age, the risks associated with HSV infections are no greater than that for an older child or adult. Exceptions include individuals with eczema who may develop secondary herpetic skin infection or immunocompromised children who may develop a disseminated and possibly fatal infection.

5. How is HSV transmitted?

In the neonatal period, HSV (usually Type II) is typically transmitted to the infant during passage through the birth canal. Type I infection is believed to be spread by direct contact, or through contact between infected secretions (saliva) and an opening in the skin (with resultant herpetic whitlow). HSV Type II typically occurs as a sexually transmitted disease. Theoretically, virus from an infected source could be transmitted by hand to the genital area. However. in the usual circumstances of staff-child relationships, the likelihood of transmission by this means is negligible. HSV particles can survive on inanimate objects. One study showed that HSV from oral lesions survived two hours on skin, three hours on cloth. and four hours on plastic surface. This does have some implications for young children who may mouth toys used by children who have active HSV infections.

6. How is protection from acquiring HSV infection afforded?

Persons serving individuals with active herpes lesions can protect themselves by (1) avoiding direct contact with the infected individuals, especially their active lesions, (2) thorough washing of hands with soap after direct contact with a child or objects in contact with infectious lesions, and/or (3) using gloves while handling an infected child or the objects used by an infected child.

7. What is the likelihood a staff member might unwittingly carry HSV from one child to the next?

If a staff member uses gloves and washes hands with soap after direct contact with the child with active HSV lesions, the likelihood of carrying the virus to another child is extremely small. It is possible that a staff member might have contact with a child with asymptomatic primary HSV Type I infection. In this case, it is possible that there could be child-to-staff-to-child transmission. This is a possibility which is unavoidable and exists in all situations where adults care for children (i.e., hospitals, schools, home, day care, etc.). Most individuals eventually contract HSV infection and the infection is usually very benign (that is, associated with nonserious consequences).

8. Is HSV considered to be a quarantinable disease?

Although the American Public Health Association's control of communicable disease recommendations state that this is not a quarantinable disease, the special circumstances under which professionals serve infants warrant a more conservative approach than that applied to the adult population. Therefore, we suggest that some precaution is appropriate for infants and young children with active HSV infections. The conservative precaution would be avoidance of direct contact with a child with active lesions by professionals and other children. In certain circumstances, a more reasonable approach would be the use of gloves and good hand washing techniques when serving a child with active lesions. The latter case may be applicable in home-based programs particularly when a child has frequent recurrences but requires frequent and regular services in preschool programs.

9. What is an appropriate approach to serving children with active or recurrent HSV infections in home-based programs?

   a. If no lesions are present, the child is presumably not infectious and there is no risk to those who have direct physical contact with the child.

   b. No precautions need to be taken when lesions are not present.

   c. If lesions are present, gloves should be worn during direct contact and hands should be washed well with soap after gloves are removed.

   d. If the child may come into contact with the clothes of the service provider, a gown should be worn as well. Disposable gowns are available for convenience.

10. What is an appropriate approach to serving children with active or recurrent HSV infections in center-based programs.

   a. If a child in a preschool program has active herpetic lesions, whether Type I or Type II, he should not be permitted in the classroom. When the lesions have disappeared (four to five days after the appearance of the vesicle, for example), the child may return to the classroom with no risk to other children or adults.

   b. No precautions need to be taken when serving a child without active lesions.

   c. If a child with active HSV infection requires continued services in a center-based facility, the child should be isolated from other children, the number of service providers should be limited, and the service providers should exercise the same precautions as in item eight.

d. The only children who may be an unusual risk for contracting serious HSV disease are those who are immunocompromised or who have severe eczema (this is also true for infections other than those caused by HSV). If a child with known active HSV infections is excluded from the class, problems of infectivity to other children or staff should not occur. Children with physical defects such as heart problems, lung problems, or physical anomalies are not at any greater risk than other children in the class.

e. No special precautions agains HSV need to be taken by children who have other contagious diseases such as flu or colds. Presumably, if they are significantly ill. they will not be in the classroom nor will the child with active herpetic lesions.

f. The only medications which are of significance are those with lower resistance. In many cases, if the child on such medications is particularly susceptible to infections, his doctor will have recommended isolation from other children for an appropriate period of time.

11. What considerations, if any, are necessary when transporting a child with HSV on a school bus with other children?

As stated above, a child with active herpes lesions should remain away from school until no longer infectious. If the frequency of recurrences precludes center-based instruction, services should be provided as explained under item nine.

Richard D. Andersen, M.D.
Assistant Professor of Pediatrics
University of Iowa

James A. Blackman, M.D.
Assistant Professor of Pediatrics
University of Iowa

Alfred Healy. M.D.
Professor of Pediatrics
University of Iowa

HERPES QUESTIONS

1. If a canker sore (within mouth) is not a herpes virus, what is it?

   Minor trauma to surface or mucous membranes in the mouth. Normal oral bacteria may then enter. No virus or visual disease causing bacteria is isolated in that instance.

2. Concern for child's age (critical periods) seems to be decreasing (2 years - 6 month - newborn). Please comment:

   Newborns are "different" and more suseptible in liver. brain, organs, etc. Ages cited may refer to gingivostomatitis (typical as infant disease and, therefore, special). Generally no dissemination beyond the mouth.

3. If a student has genital herpes but claims not to have had sexual contact, how could infection occur?

   Suppose self-inocculation potentially from oral sore. If has had sexual intercourse with individual who does not have known herpes simplex, individual has likely colonized but without symptoms. Most likely, route is female to male in that instance. Male tends to have much more overt or obvious disease. Females tend to have greater tendency toward colonization with the virus on the cervix of the uterus without providing symptoms.

4. If child has chicken pox prior to one year of age, does the child have a greater chance toward recurrent chicken pox or shingles, etc.?

   Probably true. High risk for chicken pox in first couple of weeks of life. Chicken pox prior to first year, more likely to have shingles or other form later in life. Thread of evidence, one can have chicken pox twice but exceedingly rare. More likely, reactivated in other form (i.e., shingles).

5. Is is better to cover lesions with bandaides and send to school or keep at home till lesions disappear?

   Current provision recommends child with oral lesions stay home. Use procedures compatible with other infectious diseases (i.g., impetigo). Covering oral lesions with bandaides may be difficult. If a frequent occurrence for child, school must make other provisions (i.e., mask, bandaides, in order to keep child in the program).

6. Who usually makes the decision if child attends school or center?

   If sore has been identified, person in charge of center would decide. If rash is unclear (herpes, impetigo, etc.), physician can help center director.

7. Some parental response is positive toward Lefison in large amounts of treatment for herpes. Should we recommend this to other parents?

   Lefison is one of many substances. It is unproved (controlled studies).

8. Do pregnant women need to take special precautions with children with oral herpes?

   No special reason for concern in herpes. Concern would be raised if CMV is present. Special concern only if women has genital sores with which baby may come in contact.

9. Should child be kept home?

   Have special child's parents aware of risks. Less of a problem if in remission. Keep toddler home. If school-aged child, clarify. No contact with child if having chemotherapy.

Presence of herpes should not warrant hesitation in giving CPR. Seventy to one hundred percent chance of herpes, one or two in all adult already. Virus is susceptible to alcohol swab.

Stress, fever, menstruation, sunbathing (ultraviolet lights), and skiing are primary causes of reactivation of the virus.

Source: University of Iowa

Cytomegalovirus Infections:

Information and Suggested Approach for Educational Personnel

James F. Bale, Jr., M.D., James A. Blackman, M.D., Jody Murph, M.D.

The Departments of Pediatrics and Neurology
University of Iowa College of Medicine
Iowa City, Iowa

Address correspondence to: Dr. Bale, Department of Pediatrics, University of Iowa Hospitals and Clinics, Iowa City, Iowa 52242

Supported by the Spellman-Rockefeller Fund, the University of Iowa. Dr. Bale is supported by TIDA #K07 NS00805 from the NINCDS.

CYTOMEGALOVIRUS INFECTIONS:

INFORMATION AND SUGGESTED APPROACH FOR EDUCATIONAL PERSONNEL

Introduction:

Educators, therapists, and other personnel in special education settings have recently raised questions about certain infectious diseases among their clients which potentially pose risks for themselves as well as their offspring. The dominant concerns now focus on cytomegalovirus (CMV). This paper is intended to allay concerns by presenting up-to-date information on CMV and suggested guidelines for prudent practice in working with chidren who are or may be actively excreting CMV.

What is Cytomegalovirus:

Cytomegalovirus (CMV) belongs to the herpes virus group which also incudes herpes simplex virus (the virus that causes cold sores and genital herpes), Varicella-Zoster virus (chicken pox-shingles virus), and the Epstein-Barr (infectious mononucleosis) virus. These viruses are grouped together because of their common structure and similar biologic behavior. Many different mammalian CMVs have been discovered (e.g., mouse CMV, rat, CMV, human CMV, etc.), but infection from one species (e.g, mice) to another (e.g., humans) rarely, if ever, occurs. Thus, infection with human CMV is always the result of contact with another infected human being.

Human CMV infection, like many other viral infections, occurs throughout the world. In the United States approximately 1 to 2 percent of all infants excrete CMV in their urine at birth. Thereafter, CMV infection is steadily acquired throughout life, and nearly all adults have been infected with CMV by the time they reach age 50 years. People in developing nations or in areas with high population density tend to acquire CMV infection at an early age. In Iowa, we estimate that approximately 40 percent of 35 year-old adults have serologic (blood antibody test) evidence of past CMV infection.

CMV is transmitted via several different mechanisms. With the exception of blood transfusion or organ (e.g., heart or kidney) transplantation, transmission of CMV requires close, personal contact with an infected individual. Common sources of CMV infection include CMV-infected children, CMV-infected sexual partners, and CMV-infected blood products. In an infected individual, CMV can be isolated from urine, saliva, blood, tears, stools, cervical secretions, or semen. CMV infection can also be transmitted from mother to child via breast milk. The urine or saliva of an infected individual usually contains the greatest amount of virus. An infected individual, adult or child, can excrete CMV in urine or saliva for many months or even years.

CMV-infected children represent one of the most common sources of CMV infection. Several studies from the United States and other countries have shown that between 10 and 20 percent of healthy one-year-old children will be excreting CMV. In certain situations, such as day care centers, the percentage of children between the ages of one and three years excreting CMV has approached 50 percent. In a survey of an Iowa day care center, 25 percent of children between two months and 6 years had CMV in their urine. Despite the common prevalence of CMV among children, the risk to exposed children or adults appears to be very small. Several well-controlled studies indicate that risk of CMV infection among women who work with young children does not exceed that of women who stay at home.

What Are the Clinical Manifestations?

In general, the manifestations of CMV infection depend on the age and the immune status of the infected individual. In newborn infants, the vast majority have no symptoms at birth. Approximately 10 to 15 percent of these children will later develop varying degrees of hearing loss. An additional 5 to 10 percent have a more serious illness known as cytomegalic inclusion disease (discussed below). CMV infection later in life rarely causes symptoms in healthy individuals. Occasionally children and adults develop an infectious mononucleosis-like illness with fever, malaise, and glandular swelling. Patients with abnormal immune systems can develop more serious complications such as pneumonia, retinitis (inflammation of the retina), and encephalitis (infection of the brain).

What is Congenital Cytomegalic Inclusion Disease?

Cytomegalic inclusion disease (CID), caused by CMV, represents the most common, serious congenital (occuring before birth) illness due to an infectious agent. Although 1 to 2 percent of all newborns have CMV infection, only 0.05 to 0.1 percent have CID. In other words, CID occurs in approximately one in every thousand newborns. This risk is approximately equal to the chance that a healthy twenty-five-year-old woman will give birth to a child with Down's syndrome (trisomy 21), the most common chromosomal disorder. The risk of CID is greatest during the primary (or first) CMV infection of the pregnant woman. Even if primary infection occurs, however, there is still a 90 to 95 percent chance that the baby will be healthy.

The infant with CID can have damage to numerous body organs, including the lungs, liver, spleen, heart, and brain. The most serious consequence of CMV infection is the damage done to the developing nervous system. As a result, CMV-infected infants can have seizures, mental retardation, deafness, and blindness. Fortunately, this serious combination of sequelae develops relatively infrequently.

Is CMV Infection Treatable?

Although antiviral drugs are being investigated, there is as yet no specific treatment for cytomegalovirus infection.

How is CMV Infection Detected?

The most reliable method to detect CMV infection is to culture the virus from body fluids such as urine, saliva, or blood. The virus grows slowly, and up to three or four weeks may pass before the culture results are complete. A more rapid, but less reliable method is to perform serologic tests on blood. These tests detect antibodies which the body develops in response to CMV infection. Positive tests do not necessarily indicate active CMV infection but rather suggest that CMV infection has occurred sometime in the past.

Main Points:

1. Nearly everyone sooner or later acquires CMV infection, usually a mild form.

2. Active CMV infection is very common in day care/preschool settings with infected children excreting the virus for weeks to months.

3. Congenitally infected children may excrete virus for several years.

4. Transmission of CMV infection requires intimate contact with an infected individual such as in a parent-child relationship. Health and day care/preschool workers apparently do not have sufficiently close contact with infected children to make them acquire infection at any greater rate than those outside these professions.

5. The greatest concern regarding CMV infection is for the pregnant woman, especially if she has not been previously exposed to CMV and lacks protective antibodies.

6. While a congenitally infected child may excrete CMV in urine and possibly saliva for years after birth, isolation of such a child is neither warranted nor recommended since it is likely that many other children in the same setting are also excreting CMV. Such is one of the occupational risks - albeit low - of working with very young children.

Recommendations

1. As with all communicable diseases, good hygiene significantly lowers the risk of transmitting CMV infection.

2. Individuals who have intimate contact with infants or young children who may be actively shedding CMV should wash their hands with warm, soapy water after contact with the child. Diapers should be disposed of in suitable containers. Gowns or rubber gloves are not necessary.

3. Toys mouthed by young children may be disinfected by immersing them in a solution of one part chlorine bleach to nine parts water. Nonimmersible items should be air-dried for several hours in between use.

4. Congenitally infected infants should not be excluded from center-based programs and should continue to receive educational and therapeutic services.

5. Pregnant women who work with infants or young children may wish to have a blood test to determine whether they are susceptible to CMV infection. If CMV antibody is present, the individual is likely immune to CMV and the risk to her unborn child is extremely small. If the individual is not immune, she should practice good hygiene and should avoid direct contact with infants or young children who are known to be excreting CMV.

6. In hospital settings, it is usually recommended that pregnant women avoid contact with an infant known to be excreting CMV. The same policy might be applied to the educatinal setting even though the risk of transmission is low provided good hygienic practices are observed. Exposure to other children who are excreting CMV but who are not tested, is likely to occur. The only way to avoid this risk of exposure is to avoid young children altogether. a practice generally not practical or desired. Despite the high rate of CMV excretion among young children grouped in day care or educational settings, epidemics of cytomegalic inclusion disease have not occurred. This suggests that the risk to pregnant women working in these settings must be small.

7. In order to reduce the attention that a child with congenital CMV infection receives, it may be helpful to document that such a child no longer excretes this virus. Urine cultures for CMV may be obtained every twelve months. If a culture is negative, a follow-up culture should be obtained six months later to confirm the cessation of virus excretion. Since not all health care facilities can culture CMV and since CMV does not survive transport well, specimens should be submitted directly at a facility, such as the Univeristy of Iowa, where cultures can be processed immediately, making the results more reliable.

Selected Readings

Bale, J. F.: Human ctyomegalovirus infection and disorders of the nervous system. Arch Neurol 41:310-320, 1984. "A detailed summary of the neurologic complications of CMV infection."

Ho, M.: Cytomegalovirus biology and infection. Plenum Medical Book Company. New York. 1982 "An excellent monograph that thoroughly describes the biology, epidemiology, and clinical syndromes of CMV."

Hutto, S.C., Ricks, R. E., & Pass, R. F.: Prevalence of Cytomegalovirus excretion from children in five day care centers - Alabama. Morbidity and Mortality Weekly Report. 34:49-51, February 1, 1985. "A summary of the excellent studies of Pass, et al. that investigated CMV excretion in various day care centers. The report also outlines current thoughts regarding the risks of CMV infection for day care workers."

Pass, R. F., Hutto, S. C., Reynolds, D. W., et al. Increased frequency of cytometalovirus infection in children in group day care. Pediatrics 74:121-126. 1984. "A recently published study that describes the frequency of CMV infection in day care centers."

Plotkin, S. A., Michelson, S., Pagano, J. S., et al. CMV: pathogenesis and prevention of human infection. March of Dimes Birth Defects Foundation. Alan R. Liss, Inc., New York, 1984. "A summary of a scientific workshop regarding CMV held in Philadelphia April 20-22, 1983."

CMV QUESTIONS

1. Of 5 percent infected babies in pregnant mothers, how many are damaged?

   Majority are damaged and show symptoms within the nervous system. (Degree of impairment varies from hearing and visual concerns to seizures and psychomotor retardation problems, etc.)

2. Do adults shed CMV?

   CMV infectious mononucleosis syndrome is in adults (urine) for months or up to two years. Homosexuals can have life-long virus depending on quantity of sexual contact.

3. Do you suggest a titer on prospective teacher of child secreting the virus.

   Probably not much risk, but extent is not known. Alabama studies show no risk (i.e., hospital settings). Be certain method of measuring titer is reliable. (Titer greater than 1-8 or positive show immune from further serious infection.)

   If titer results indicate 1-16, individual was infected in the past, but no longer excreting the virus. If immunosuppressed at later date (i.e., cancer, kidney transplant, ect.), individual can re-shed virus again.

   If positive titer, mother and baby are immune. If immune. they will not deliver infected and affected baby.

4. Should child be assigned to pregnant teacher?

   Do not remove child from center-based program. Desirable to have another teacher/adult work with child. Ten to forty-five times number of children also secreting virus in community. One can get virus from many other sources.

5. What is the percentage of children in schools having CMV?

   Day care settings (2 mo.-6 yrs.) were explored in Iowa City. Data indicates 25 percent are excreting the virus.

6. How to check the blood for transfusions?

   Blood for transfusions is screened routinely at Iowa City (for organ transplants, leukemia of serious malignancies, and premature or very young infants). Check antibody status first. If no antibodies, screen blood before transfusion.

7. Does the virus cross the placental barrier in pregnant women to the fetus?

   Yes, virus can infect the fetus throughout pregnancy.

8. Are guidelines for CMV being established?

   CMV is a trickier problem since not as visible as herpes. We are working on guidelines.

   Waiting for day care guidelines from the Center for Disease Control. Will be available as soon as possible.

9. Is CMV virus present in tears?

   Yes, virus is secreted in tears. Quantity of virus is less than in urine and saliva. Urine and saliva remain most likely source.

10. How could school nurse determine if child has CMV? And should the child be in the classroom?

    There is not a great risk for child remaining in the class. There is no practical way to keep children with virus out of shcools. Nurse can get culture, place on ice, and send to laboratory.

11. How long does CMV diagnosis take by culture?

    Takes 6-14 days. Lag time with lab report, contact physician, and physician contact to nurse.

12. What do you do until lab results are returned?

    There is no treatment. Few areas of concern or precautions. Reduce contact with pregnant individual (or those at risk).

13. As a potential mother, can you sample my blood to see if antibodies are present?

    Some false negatives and false positives. To prevent infection, use hygienic measures (husband, children, friends).

    Vulnerable infant may not have symptoms (i.e., gland swelling). Immuno suppressed state (kidney transplant, etc.) can have severe or no symptoms.

14. How often do you recommend urine/saliva analysis on a congenitally infected child? Could the virus be present some months and not others?

    Virus amount waxes and wanes in secretions. Do analysis every 6-12 months.

15. A physician refused to check shedding on an infant. What should we do?

Procedures will vary among physicians. Alabama staff would NOT feel CMV location in urine "does much good." Most people do not recommend routine, serial cultures on most infants. We haven't yet decided what to do with the information.

16. Correlation noted in the handbook (above) about CMV and Down Syndrome. Please comment.

CMV is not a cause of Down Syndrome. There may be immunological abnormalities in Down children making them at greater risk for CMV.

17. How long after exposure to CMV to build up an immunity?

Immunity develops within 2-3 months in general and lasts life long.

18. Can CMV cause degenerative conditions?

Most people feel it is not a degenerative syndrome.

19. What is recommended for inservicing staff prior to placing CMV child in preschool program?

Recommend CMV handbook entitled: CMV: Diagnosis, Prevention, and Treatment
Children's Hospital
345 North Smith Avenue
St. Paul, Minnesota 55102
(612) 298-8835

Pediatric Acquired Immune Deficiency Syndrome (AIDS) and Aids Related Complex (ARC) are communicable diseases of recent concern. Suggested framework on which to develop programs to meet the needs of these pupils in the public school system will be forthcoming.

Since AIDS and milder immune deficient syndromes associated with AIDS virus infection, eg. ARC are transmitted through intimate sexual contact or blood to blood contact, children with either AIDS or ARC should not pose a health risk to other children or staff in a school setting.

Under the following circumstances a child with AIDS/ARC might pose a risk of transmission to others; if the child lacks toilet training, has open sores that cannot be covered, or demonstrates behavior (e.g. biting) which could result in direct innoculation of potentially infected body fluids into the bloodstream.

Does Contact with Body Fluids Present a Risk?

All body fluids of all persons should be considered to potentially contain infectious agents (germs). The term "body fluids" includes: blood, semen. drainage from scrapes and cuts, feces, urine, vomitus, respiratory secretions (e.g. nasal discharge) and saliva. Contact with body fluids presents a risk of infection with a variety of germs. In general, however, the risk is very low and dependent upon a variety of factors including the type of fluid with which contact is made, and the type of contact made with it.

Examples of particular germs that may occur in body fluids of children and the types of transmission concerns are found on the following page. It must be emphasized that with the exception of blood, which is normally sterile, the body fluids with which one may come in contact usually contain many organisms, some of which may cause disease. Furthermore. many germs may be carried by individuals who have no symptoms of illness. These individuals may be at various stages of infection: incubating disease, mildly infected without symptoms, or chronic carriers of certain infectious agents including the AIDS and hepatitis viruses. In fact, transmission of communicable diseases is more likely to occur from contact with infected body fluids of unrecognized carriers than from contact with fluids from recognized individuals because simple precautions are not always carried out.

GENERAL INFORMATION ON AIDS/ARC

Questions and Answers

1. What exactly is AIDS?

AIDS is an acronym for Acquired Immune Deficiency Syndrome. This is a recently recognized disease that occurs in some people months to years after infection with the AIDS (HTLV-III) virus. A person with this condition is unable to fight off a variety of infections and rare illnesses.

2. What are the symptoms?

While the symptoms of AIDS vary, they remain for unusually long periods of time. The individual may have repeated infections that result in persistent diarrhea, swollen glands, fatigue, fevers or persistent cough which the body is unable to fight off. After months to years a more severe and life-threatening illness develops, usually pneumonia or an uncommon skin cancer.

3. What is the difference between AIDS and ARC?

Acquired Immune Deficiency Syndrome (AIDS) is a medical condition in which the body has repeated infections and is unable to protect itself from certain unusual tumors and/or infections. AIDS Related Complex (ARC), sometimes called PRE-AIDS, is a condition in which symptoms similar to those of AIDS are present but the person has not had a severe or life-threatening illness. Some individuals with ARC may progress to AIDS, but many have the symptoms due to other diseases.

4. How can it be transmitted?

A virus has been found in the blood of people with AIDS, therefore, blood-to-blood contact could spread (transmit) the disease to others. The transmission of the condition has also been traced to intimate sexual contact with people known to have AIDS or who are in high risk groups, i.e., intravenous drug users, homosexual males, recent Haitian immigrants, recipients of infected blood products. AIDs is not transmitted by casual contact with these people, such as holding a child, shaking hands, playing games, or working together; neither is it transmitted by objects used by these people such as toilets, doorknobs, pencils, chairs, cups. It is not transmitted through the air by coughing or sneezing.

5. Can my child catch AIDS/ARC from adults or other children?

Children, like adults, can only catch this disease from intimate sexual contact or blood-to-blood contact with a person who has AIDS virus infection. The children who are known to have the disease received

the infection from exposure to their mother's blood during pregnancy or in the course of childbirth from a blood transfusion, or from blood products used in treating hemophilia.

6. Can you get rid of AIDS? If not, are there any developments in that direction?

   There is no cure at present since this is a new disease. It is known that not everyone develops the disease who has actually been infected with the AIDS virus. Now that the virus has been identified, the potential exists to develop a vaccine in the near future.

7. Why do Haitians contract AIDS/ARC more frequently than other ethnic populations?

   Haitians who are recent (since 1978) immigrants to the U.S. or Canada appear to have a higher risk in contracting AIDS. There have been many hypotheses offered, such as the use of unclean needles in certain treatments, but as yet none have been proven.

8. Do all children with AIDS/ARC die?

   Of the children known to have AIDS, 68 percent have died of one of the rare infections or illnesses that they acquired because they could not fight off infections. Children with ARC may not progress to AIDS and one of these rare infections. It is not known how many individuals have ARC.

9. What medical progress is occurring relative to AIDS/ARC?

   Scientists at the National Center Institute in 1984 determined that a virus (HTLV-III) is the probable cause of AIDS. This discovery has made it possible to develop tests to determine who has been exposed to the AIDS virus. Tests are also being developed to screen donated blood to reduce the risk of transmission through transfusions or blood products. The development of a vaccine is expected in 5-10 years.

10. Will the school eventually be testing or screening all children for AIDS virus infection.

    This is not likely. School screening or testing programs are developed according to the prevalence of a condition in the school age population. School age children in general are not considered a high risk group.

11. Is AIDS related to Herpes?

    AIDS has been confused with Herpes but is an unrelated illness. There are five types of Herpes viruses which cause the following ilnesses: oral and genital herpes, chicken pox, mononucleosis, shingles and cytomegalovirus. However, it should be noted that people with immune deficiency are more susceptible to the illness associated with these viruses.

12. Are pregnant techers who instruct AIDS/ARC children more vulnerable to AIDS/ARC transmission?

Pregnant teachers are at no greater risk than others in the school setting. Teachers, like any other individual, may contract the disease from sexual contact with someone with AIDS/ARC or from inoculation with infected blood.

13. Are there certain precautions that will be taken if a child with AIDS is present in the school?

Schools will not need any special precautions to protect other children beyond their routine procedures for cleaning up body fluids after any child has an accident or injury. The child with AIDS/ARC will need protection if there is an outbreak of measles or chickenpox, since the child is unable to fight off or be protected by vaccines against such diseases.

14. How can I be assured that there is no chance that my child can contract the disease if it is present in the school?

It is important to think of this as a condition present in an individual, not in a school or building. No child in the USA has ever acquired the disease other than from his/her mother before birth or from a blood product or transfusion.

15. Are you positive AIDS can't be caught from toilet seats, drinking out of the same cups, etc.?

With current information, there is no evidence that could lead us to assume that the AIDS virus can survive outside the body and infect others. This has been a concern from many diseases. Toilet seats have not been demonstrated to be the source of infection for any of these many diseases. Sharing common cups is a possible means of transmission of agents capable of infecting the mouth or throat (e.g., influenza or the common cold) and should generally be discouraged. The AIDS virus is not such a virus.

16. With all the cold germs, etc., that children carry, wouldn't it be an enormous risk to the AIDS child to be exposed to said germs?

Most children with AIDS are under medical treatment to protect them as much as is possible from common germs. It is not considered appropriate to deprive them or any child with an immune deficiency of normal socialization with other children. Those that are too ill to tolerate childhood infections will not be sent to school in the first place.

17. How about spit/saliva? Are you 100 percent positive that this can't transmit AIDS?

From everything that has been studied with over 8,000 known cases in the past three years, there has been no documentation of transmittal of the disease by saliva even in the intimacy of the family setting.

18. Isn't there the possibility that the AIDS child can cut him/herself (e.g., at recess) and not inform anyone? After all, a five-year-old child cannot understand how serious the implications of this could be. What if the child bleeds in the bathroom and doesn't tell anyone?

There is no risk of spread of infection from the blood of a child with AIDS unless that blood is inoculated into another person through a cut that is open to their bloodstream. Teachers monitor activities on the playground and children are taught to report any accidents that may occur. Children will often seek care if they are injured even for very minor cuts.

19. I, as a parent, believe that I should have a right to know if a child or adult in my child's school has AIDS.

Your concerns as a parent are understandable in light of the conflicting information that has been available on this new illness. Schools must protect each child's right to privacy whether he/she has herpes, leukemia, or AIDS. In all cases, the risks to the school population are determined by each child's physician and the school medical advisor. Much has been discovered about the transmission of AIDS. Now that the virus has been found, the means of spread has been narrowed to either intimate sexual contact or blood-to-blood contact. This means the blood or fluid from a cut on a person with the virus would have to be injected into the blood of another person to possibly transmit the disease.

20. What if my child makes friends with a child with AIDS and, for example, brings the AIDS child home to play. Don't I have a right to know that this child has AIDS in the event that he/she hurts him/herself at my house?

Children playing together is not the kind of contact that will transmit AIDS. The parents or guardians of any child with AIDS or other immune deficiencies must consider who needs to know of the child's health problem. Caring for the child after a typical bump, scrape, or bruise should pose no problem if you merely cover any cuts with a bandage, then wash your hands after caring for the child.

21. In younger children who develop a close friendship with other children their age, they sometimes like to become "blood brothers/sisters". Usually the children will cut a finger with a pin or knife and join their blood at the point of the wound. Can this event possibly transmit AIDS?

The practice of becoming "blood brothers" presents a risk of spread of a number of infections including those that may be transmitted from germs on the knife or instrument used to make a cut. The practice of squeezing blood out of the wound to mix with that of the other individual would decrease the potential risk. This practice presents a risk of transmission of AIDS, hepatitis B, etc., and should certainly be discouraged. Thus far, none of more than 100 persons having accidental needle sticks from needles recently in contact with blood of AIDS patients have developed infection with the AIDS virus.

22. Are nurses, teachers, and administrators adequately informed about AIDS/ARC?

AIDS is a comparatively new disease and so much has been learned in the recent months that it is necessary to educate all school staff, community leaders, and members of the medical community who have not had access to recent factual information.

TRANSMISSION CONCERNS IN THE SCHOOL SETTING
BODY FLUID SOURCE OF INFECTIOUS AGENTS

BODY FLUID - SOURCE	ORGANISM OF CONCERN	TRANSMISSION CONCERN
Blood -cuts/abrasions -nosebleeds -measles	Hepatitus B. virus AIDS virus Cytomegalovirus	Bloodstream inoculations through cuts and abrasions on hands
-contaminated needle		Direct bloodstream inoculation
*Feces -incontinence	Salmonella bacteria Shigella bacteria Rotavirus Hepatitis A virus	Oral inoculation from contaminated hands
*Urine -incontinence	Cytomegalovirus	Bloodstream and ?oral inoculation from contaminated hands
Respiratory Secretions -saliva -nasal discharge	Mononucleosis virus Common cold virus Influenza virus	Oral inoculation from contaminated hands
	AIDS virus	Bloodstream inoculation through cuts and abrasions on hands; bites
*Vomitus	Gastrointestinal viruses, e.g., (Norwalk agent Rotavirus)	Oral inoculation from contaminated hands
Semen	Hepatitus B AIDS virus Gonorrhea	Sexual contact (intercourse)

*Possible transmission of AIDS and Hepatitis B is of little concern from these sources. There is no evidence at this time to suggest that the AIDS virus is present in these fluids.

What Should be Done to Avoid Contact With Body Fluids?

When possible, direct skin contact with body fluids should be avoided. Disposable gloves should be available in at least the custodian's, nurse's, or principal's office. Gloves are recommended when direct hand contact with body fluids is anticipated (e.g., treating bloody noses, handling clothes soiled by incontinence, cleaning small spills by hand). If extensive contact is made with body fluids, hands should be washed afterwards. Gloves used for this purpose should be put in a plastic bag or lined trash can, secured, and disposed of daily.

What Should be Done if Direct Skin Contact Occurs?

In many instances, gloves may be immediately unavailable or other anticipated skin contact with body fluids may occur (e.g., when wiping a runny nose, applying pressure to a bleeding injury outside the classroom, helping a child in the bathroom). In this case, hands and other affected skin areas of all exposed persons should be routinely washed with soap and water after direct contact has ceased. Clothing and other nondisposable items (e.g., towels used to wipe up body fluid) that are soaked through with body fluids should be rinsed and placed in plastic bags. If presoaking is required to remove stains (e.g., blood, feces), use gloves to rinse or soak the item in cold water prior to bagging. Clothing should be sent home for washing with appropriate directions to parents/teachers. Contaminated disposable items (tissues, paper towels, diapers) should be handled as with disposable gloves.

How Should Spilled Body Fluids be Removed From the Environment?

Most schools have standard procedures already in place for removing body fluids (e.g., vomitus). These should be reviewed to determine whether appropriate cleaning and disinfection steps are included. Many schools stock sanitary absorbent agents specifically for cleaning body fluid spills (e.g., ZGOOP, Parsen Mfg. Co., Philadelphia, PA). Disposable gloves should be worn when using these agents. The dry material is applied to the area, left for a few minutes to absorb the fluid and then vacuumed or swept up. The vacuum bag or sweepings should be disposed of in a plastic bag. Broom and dustpan should be rinsed in a disinfectant. No special handling is required for vacuuming equipment.

Handwashing Procedures

Proper handwashing requires the use of soap and water and vigorous washing under a stream of running water for approximately 10 seconds.

Soap suspends easily removable soil and microorganisms allowing them to be washed off. Running water is necessary to carry away dirt and debris. Rinse under running water. Use paper towels to thoroughly dry hands.

Disinfectants

An intermediate level disinfectant should be used to clean surfaces contaminated with body fluids. Such disinfectants will kill vegetative bacteria, fungi, tubercle bacillus, and viruses. The disinfectant should be registered by the U.S. Environmental Protection Agency (EPA) for use as a disinfectant in medical facilities and hospitals.

Various classes of disinfectants are listed below. Hypochlorite solution (bleach) is preferred for objects that may be put in the mouth.

1. Ethyl or isopropyl alcohol (70 percent)

2. Phenolic germicidal detergent in a 1 percent aqueous solution, e.g., Lysol*.

3. Sodium Hypochlorite with at least 100 ppm available chlorine (1/2 cup household bleach in 1 gallon water, needs to be freshly prepared each time it is used).

4. Quaternary ammonium germicidal detergent in 2 percent aqueous solution, e.g., Tri-quat*, Mytar*, or Sage*.

5. Iodophor germicidal detergent with 500 ppm available iodine, e.g., Wescodyne*.

Disinfection of Hard Surfaces and Care of Equipment

After removing the soil, a disinfectant is applied. Mops should be soaked in the disinfectant after use, and rinsed thoroughly or washed in a hot water cycle before rinse. Disposable cleaning equipment and water should be placed in a toilet or plastic bag as appropriate. Nondisposable cleaning equipment (dustpans, buckets) should be thoroughly rinsed in the disinfectant. The disinfectant solution should be promptly disposed of down a drain pipe. Remove gloves and discard in appropriate receptacles.

Disinfection of Rugs

Apply sanitary absorbent agent, let dry, and vacuum. If necessary, mechanically remove with dustpan and broom, then apply rug shampoo (a germicidal detergent) with a brush, and revacuum. Rinse dustpan and broom in disinfectant. If necessary, wash brush with soap and water. Dispose of disposable cleaning equipment as noted above.

*Brand names used only for examples of each type of germicidal solution and should not be considered an endorsement of a specific product.

Laundry Instructions for Clothing Soiled With Body Fluids

The most important factor in laundering clothing contaminated in the school setting is elimination of potentially infectious agents by soap and water. Addition of bleach will further reduce the number of potentially infectious agents. Clothing soaked with body fluids should be washed separately from other items. Presoaking may be required for heavily soiled clothing. Otherwise, wash and dry as usual. If the material is bleachable, add 1/2 cup household bleach to the warm cycle. If material is not colorfast, add 1/2 cup nonclorox bleach (e.g., Clorox II, Borateem) to the wash cycle.

GUIDELINES FOR HANDLING BODY FLUIDS IN SCHOOLS was prepared by Elaine Brainerd, State Department of Education, in consultation with James Hadler, M.D., MPH Chief, Epidemiology Section, and Patricia Checko, MPH, Epidemiology Program, Connecticut State Department of Health Services, December, 1984.

CHILD ABUSE

MANDATORY REPORTING

It is now mandatory that all cases of suspected child abuse and neglect in the United States be reported to the proper authorities. In addition to the federal Child Abuse Prevention and Treatment Act, P. L. 93-247, every state has a law which defines child abuse and neglect and spells out the penalties for professionals who fail to report. All nurses are mandatory reporters in Iowa, and should be familiar with the law and the reporting procedure for the state and local area education agency. In addition, each local education agency should have written procedures for reporting which adhere to state guidelines.

More complete information about common clinical findings, documentation of findings, and suggested follow-up will be found in resources listed in this manual.

Forms for referring to Department of Human Services, information needed for the referral, and indicators of maltreatment are included in this manual.

SUMMARY OF LAW

The following is a brief summary of changes passed by the 1985 Iowa Legislature.

House File 451 - A mandatory reporter now must contact the Department of Human Services, (DHS) orally within 24 hours. A written report must be submitted to the DHS within 48 hours of the oral report. Forms for making the written report are available from DHS offices in every county.

This change means that a mandatory reporter is no longer required to notify the building administrator. Mandatory reporters cannot be coerced into notifying anyone of the report except DHS. If the mandatory reporter does notify the principal or superintendent that a report has been made, they may be violating the statutory confidentiality of the report.

If a mandatory reporter wishes to notify a superior of the report, they must include that fact in the written report or notify DHS that the information has been disseminated to a third party. In such instances, a written record must be sent to the DHS central registry and must include the name of the superior, the date and the purpose of redissemination. Violation of this law, knowingly or unknowingly, is a simple misdemeanor, meaning a maximum fine of $100 or imprisonment up to 30 days.

The law now requires that DHS notify the mandatory reporter of the results of the investigation. The reporter's identity is kept confidential as a matter of law and policy.

A mandatory reporter who knowingly and willfully fails to report suspected child abuse may result in civil and/or criminal liability. What is required for reporting is a "reasonable belief" that the child has suffered harm at the hands of or due to the omission of a parent or other person responsible for the care of the child.

Printed with permission from author, Kathy L. Collins, Department of Education.

MAKING A REFERRAL

When making a referral to the Department of Human Services about an alleged incident of child abuse, there are pieces of information which the investigator will need. This information will help to determine the immediate danger to the child and to determine whether (as defined by Iowa Code) child abuse exists. While one informant cannot provide all of this information, the questions below can help you in preparing to call in a referral.

A. Nature of the Referral

1. Why is the family being referred?
2. What incident caused you to call us?

B. For Physical Abuse

1. Has the child been injured?
2. What is the nature of the injury (size, shape, location, color, description)?
3. When did the injury occur?
4. Who caused the injury? How?
5. Did you see this happen?
6. How do you know this happened?
7. Did you see the injury?
8. How do you know there was an injury?
9. Is medical care needed?
10. Could the parent (or other responsible caretaker) have prevented the injury? How?

C. For Sexual Abuse

1. What is the nature of the sexual abuse? (Who did what to whom?--Specifically) It is important to know as precisely as possible what happened to determine later whether the incident is within the definition of sexual abuse and investigatable.
2. What is the relationship between the alleged abuser and the child?
3. When did the alleged abuse occur?
4. How did you find out the abuse occurred?
5. Was the child injured? How?
6. Do you think medical treatment is needed?
7. Has the child received a medical exam?
8. (If the alleged abuser is not a responsible caretaker, then:) Could the parent (or other responsible caretaker) have prevented the incident?

D. Denial of Critical Care

1. What kind of care is not being provided to the child?
2. What person is responsible for depriving the child of this care?

3. What effect has this lack of care had on the child?
4. Has the child been hurt or harmed?
5. Is medical care needed for the child?
6. When did the incidents you are reporting occur? (Do you have these incidents logged in written form?)
7. How did you find out these things happened?

E. History of Abuse

1. How long has this situation been going on?
2. Do you know of any prior incidents of abuse or neglect? (what, when, where, etc.)

F. Other Information

1. Does the family know your referral is being made?
2. Do you think the family is likely to flee? If yes, why do you think so?
3. What other people have witnessed abusive incidents (or injuries or other evidence of abuse?)

Some Indicators* of Child Maltreatment**

The Parent	The Child
Presents contradictory history.	Has an unexplained injury.
Presents a history that cannot or does not explain the child's injury or condition.	Shows evidence of dehydration and/or malnutrition without obvious cause.
Is reluctant to give information.	Has been given inappropriate food, drink, and/or drugs.
Gives a history of repeated injury.	Shows evidence of overall poor care.
Projects cause of injury onto a sibling or third party.	Is usually fearful.
Hospital "shops" - has taken the child to a different doctor or hospital each time medical attention is needed.	Shows evidence of repeated injury.
Has delayed unduly in bringing the child for care.	Begins to care for the parents' needs.
Refuses consent for further diagnostic studies.	Is described as "different" or "bad" by the parents.
Shows loss of control, or fear of losing control.	Is indeed different from other children in physical or emotional makeup.
Shows detachment.	Is dressed inappropriately for degree or type of injury.
Reacts inappropriately to the severity of the child's condition - either overreaction or underreaction.	Shares evidence of sexual abuse.
Complains about irrelevant problems unrelated to the injury or condition.	Shows evidence of repeated skin injuries.
Has unrealistic expectations of the child.	Shows evidence of repeated fractures.
Cannot be located.	Has injuries not mentioned in history.
Presents a history of family discord, or of personal problems such as alcoholism, drug addiction, abuse or neglect as a child, or psychosis.	

*The diagnosis of child maltreatment should be considered when some of these indicators are present. For a more detailed presentation of characteristics of abused and neglected children and their parents, see Volume 1, Chapters 1 and 2 of Child Abuse and Neglect: The Problem and Its Management, U. S. Department of Health, Education and Welfare, Office of Human Development/Office of Child Development, 1975.

**Adapted from Helfer and Kempe, "The Child"s Need for Early Recognition, Immediate Care and Protection," in Helping the Battered Child and His Family, ed. Kempe and Helfer, p. 73 Table 1.

DO'S AND DON'TS FOR WORKING WITH CHILDREN

DO:

* Listen to the child;
* Talk to the child in a way he or she can understand;
* Be empathetic and understanding;
* Express genuine concern about the child;
* Encourage the child to express his or her feelings;
* Encourage the child to verbalize his or her feelings;
* Help the child understand any unrealistic fears or guilt;
* Let the child know that you think he or she is important;
* Demonstrate consistent and predictable behavior;
* Provide the child with structure and give clear and concise rules;
* Reinforce the child's positive behaviors;
* Provide ways to clarify expectations;
* Talk to the child about his or her areas of personal conflict;
* Encourage the child to engage in experiences in which he or she can succeed;
* Enhance the child's strengths;
* Keep in mind that the child's play may give you information regarding events and feelings the child experiences.

DON'T

* Be critical of the parents when talking with the child;
* Force the child to express feelings or engage in activities he or she is excessively fearful of;
* Be condescending toward the child;
* Blame the child for his or her problems/situation.

WHEN TALKING WITH THE CHILD

DO:

* Make sure the interviewer is someone the child trusts of the same sex;
* Conduct the interview in private;
* Sit next to the child, not across a table or desk;
* Conduct the interview in language the child understands;
* Ask the child neutrally to clarify words or terms not understood which seem key;
* Tell the child if any future action will be required.

DON'T:

* Allow the child to feel "in trouble" or "at fault";
* Disparage or criticize the child's choice of words or language;
* Suggest answers to the child;
* Probe or press for answers the child is unwilling to give;
* Display shock or disapproval of parents, child, or the situation;
* Force the child to remove clothing;
* Conduct the interview with a group of interviewers;
* Leave the child alone with a stranger.

DO: Offer continuing help:

* To the child, who may need a trusted supporter during the investigation period.
* To child protective services, which may need you as a member of a "team" approach to providing protection for the child and help for the family.

DO: Advocate for the community:

* For more humane, effective procedures for handling cases of child sexual abuse.
* For the development and treatment programs for victims and perpetrators of child abuse.
* For outreach programs which offer child victims a chance to seek help early.

SAMPLE

SUSPECTED CHILD ABUSE REPORTING FORM

Name of Child: _____

Name of Parents: _____

Child's Birthdate: _____

School or Instructional Program/Grade Level/Location: _____

_____

Date of Suspected Abuse: _____

Date of Oral Report: _____

Date of Written Report: _____

Brief Description of Nature and Extent of Abuse, Neglect, or Injury: _____

_____

_____

_____

_____

_____

_____

_____

Signature of AEA Employee Making Report

Agency Position

Notification Check List*

Date

___ Bldg. Principal
___ Administrator
___ Division Director
___ County Dept. of Human Services
___ AEA Supervisor (when appropriate)

(*Documentation of dissemination of information must be sent to DHS.)

(Please attach a completed copy of Dept. of Social Services Child Abuse Reporting Form.)

State of Iowa
Department of Social Services
SUSPECTED CHILD ABUSE REPORTING FORM

This form may be used as the written report which the law requires all mandated reporters to file with the Department of Social Services, following an oral report of suspected child abuse. Fill in all available information under each category. Submit the completed form to the local office of the Department of Social Services.

FAMILY INFORMATION

Name of Child: _____ Age: _____ Date of Birth: _____

Address: _____

Phone: _____ School: _____ Grade Level: _____

Name of Parent or Guardian: _____ Phone (if different from child's): _____

Address (if different from child's): _____

Other Children in the Home:

Name	Birthdate	Condition

INFORMATION ABOUT SUSPECTED ABUSE: In this section, indicate the date of suspected abuse; the nature, extent and cause of the suspected abuse; the person(s) thought to be responsible for the suspected abuse; evidence of previous abuse; and other pertinent information needed to conduct the investigation.

REPORTER INFORMATION

Name and Title or Position: _____

Office Address: _____

Phone: _____ Relationship to Child: _____

_____ _____
Signature of Reporter Date

STATE OF IOWA
DEPARTMENT OF HUMAN SERVICES
REQUEST FOR CHILD ABUSE INFORMATION

This form, completely filled out, must accompany all requests for information from the Iowa Central Child Abuse Registry, as required by Code 235A.16. Only persons authorized under the law will have access to such confidential information.

Criminal Penalties (235A.21)

1. Any person who willfully requests, obtains, or seeks to obtain child abuse information under false pretenses, or who willfully communicates or seeks to communicate child abuse information to any agency or person except in accordance with sections 235A.15 and 235A.17, or any person connected with any research authorized pursuant to section 235A.15 who willfully falsifies child abuse information or any records relating thereto, is guilty of a criminal offense and upon conviction for each such offense be punished by a fine of not more than one thousand dollars or by imprisonment in the state penitentiary for not more than two years, or by both such fine and imprisonment. Any person who knowingly, but without criminal purposes, communicates or seeks to communicate child abuse information except in accordance with sections 235A.15 and 235A.17 shall for each such offense be fined not more than one hundred dollars or be imprisoned not more than ten days.

2. Any reasonable grounds for belief that a person has violated any provision of this chapter shall be grounds for the immediate withdrawal of any authorized access such person might otherwise have to child abuse information. (65GA, ch 1162, §20)

Redissemination of Child Abuse Information (235A.17)

A person, agency or other recipient of child abuse information authorized to receive such information shall not redisseminate such information, except that redissemination shall be permitted when:

1. The redissemination is for official purposes in connection with prescribed duties or, in the case of a health practitioner, pursuant to professional responsibilities.

2. The person to whom such information would be redisseminated would have independent access to the same information under section 235A.15.

3. A written record is made of the redissemination, including the name of the recipient and the date and purpose of the redissemination.

4. The written record is forwarded to the registry within thirty days of the redissemination. (65GA, ch 1162 §16)

Name of Person making request: _____

Office Address: _____ Office Phone: _____

Position and basis for authorization (Code 235A.15):

Information requested concerning: (Name) _____

What information is requested:

Reason for request/how information is to be used:

(Date) _____ (Signature) _____

To be completed by Registry personnel

(Date) _____

☐ Request Approved by _____ ☐ Request Denied because _____

Information released:

RESOURCES

RESOURCE ORGANIZATIONS AND LITERATURE

Health-related information from recognized organizations provides resources for the special education nurse. The following lists of organizations, education service centers, health departments, and literature contain suggestions which may be helpful in the collection of health materials.

Resource material used in a school health program or by a school nurse should be carefully reviewed and evaluated prior to use. It must be appropriate, current, and provide accurate information. Materials obtained from private industry or organizations must be evaluated for educational content. It should not be used in product promotion.

ORGANIZATIONS

Access American
Architectual and Transportation
Barriers Compliance Board
Washington, D.C. 20201

American Academy of Pediatrics
P.O. Box 1034
Evanston, Illinois 60204

American Association of Suicidology (AAS)
Central Office
2459 South Ash
Denver, Colorado 80222

American Cancer Society
777 Third Avenue
New York, New York 10017

American Dental Association
211 East Chicago Avenue
Chicago, Illinois 60611

American Diabetes Association
Two Park Avenue
New York, New York 10016

American Dietetic Association
430 North Michigan Avenue
Chicago, Illinois 60611

American Foundation for the Blind
15 West 16th Street
New York, New York 10011

American Heart Association
7329 Greenville Avenue
Dallas, Texas 75231
214/750-5300

American Humane Association
Children's Division
P.O. Box 1266
Denver, Colorado 80201

American Lung Association
1704 Broadway
New York, New York 10019

American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

American National Red Cross
17th and D Streets NW
Washington, D.C. 20006

American Nurses Association
2420 Pershing Road
Kansas City, Kansas 64108

American Public Health Association
1015 18th Street NW
Washington, D.C. 20036

American School Health Association
P.O. Box 708
Kent, Ohio 44230

American Speech, Language, and Hearing Association
10801 Rockville Pike
Rockville, Maryland 20852

Arthritis Foundation
3400 Peachtree Road NE
Atlanta, Georgia 30326

Cystic Fibrosis Foundation
6000 Executive Blvd.
Suite 309
Rockville, Maryland 20852

Down's Syndrome Congress
528 Ashland Avenue
River Forest, Illinois 60305

Easter Seal Society for Crippled Children and Adults of Iowa, Inc.
401 N.E. 66 Avenue
Des Moines, Iowa 50322
515/289-1933

Epilepsy Foundation of America
1828 L Street NW
Suite 406
Washington, D.C. 20036

Epilepsy Foundation of America
Suite 1116
733 15th Street N.W.
Washington, D.C. 20005
202/638-4350

Epilepsy Society of Area XI
25th and Carpenter
Des Moines, Iowa 50311
515/274-0630

Iowa Association for Retarded Citizens
1707 High
Des Moines, Iowa 50309
515/283-2358

Iowa Chapter-National Cystic
Fibrosis Research Foundation
8555 Harbach Boulevard
Suite 203
Des Moines, Iowa 50311

Iowa Council of Children
512 East 13th Street
Des Moines, Iowa 50319. 515/281-3974

Kidney Foundation
Two Park Avenue
New York, New York 10016

Leukemia Society of America
800 Second Avenue
New York, New York 10017
118 Broadway
San Antonio, Texas 78205
512/225-4404

March of Dimes Association
605 Douglas
Des Moines, Iowa 50313
515/244-2219

March of Dimes
Birth Defects Foundation
P.O. Box 2000
White Plains, New York 10602

Muscular Dystrophy Association, Inc
810 Seventh Avenue
New York, New York 10019

Muscular Dystrophy Association of
America
1790 Broadway
New York, New York 10019

Muscular Dystrophy Association
of America
District Office
2911 Hubbell
Des Moines, Iowa 50317
515/265-7311

National Amputation Foundation
12-45 150th Street
Whiteside, New York 11357

National Association for the Deaf
814 Thayer Avenue
Silver Spring, Maryland 20910

National Association for the Deaf/Blind
2703 Forest Oak Circle
Norman, Oklahoma 73071

National Association for Down's Syndrome
Box 63, Oak Park
Illinois 60303

National Association for Retarded Citizens
2709 Avenue E East
P.O Box 6109
Arlington, Texas 76011

National Association for the
Visually Handicapped
305 East 24th Street
Room 17-C
New York, New York 10010

National Association of Hearing
and Speech Agencies
919 18th Street N.W.
Washington, D.C. 20006

National Association of School Nurses
New York Statler Hotel
Suite 104
New York, New York 10001

National Association of the
Physically Handicapped
76 Elm Street
London, Ohio 43140

National Center for a
Barrier-Free Environment
1140 Connecticut Avenue
Suite 1006
Washington, D.C. 20036

National Clearinghouse for
Alcohol Information
P.O. Box 2345
Rockville, Maryland 20852

National Clearinghouse for
Drug Abuse Information
P.O. Box 2305
Rockville, Maryland 20852.

National Clearinghouse on Smoking
and Health Center for Disease Control
Atlanta. Georgia 30333

National Council on Alcoholism
Two East 103rd Street
New York, New York 10029

National Cystic Fibrosis Research
Foundation
202 East 44 Street
New York, New York 10017

National Dairy Council
6300 North River Road
Rosemont, Illinois 60018

National Easter Seal Society for
Crippled Children and Adults
2023 West Ogden Avenue
Chicago, Illinois 60612

National Educational Association
Department of School Nurses
1201 16th Street NW
Washington, D.C. 20036

National Federation of the Blind
1346 Connecticut Avenue NW
Suite 212
Dupont Circle Building
Washington, D.C. 20036

National Health Information
Clearinghouse, NHIC (Health Calendar)
P.O. Box 1133
Washington, D.C. 20013, 1-800-336-4797

National League for Nursing
28 Westfall Road
Rochester, New York 14620

National Multiple Sclerosis Society
Public Relations Department
257 Park Avenue South
New York, New York 10017

National Paraplegia Foundation
333 North Michigan Avenue
Chicago, Illinois 60601

National Runaway Switchboard
24-hour toll free hotline
1-800-621-4000

National Safety Council
Director of Public Information
425 North Michigan Avenue
Chicago, Illinois 60611

National Scoliosis Foundation, Inc
48 Stone Road
Belmont. Maine 02178

National Society for Autistic
Children
1234 Massachusetts Avenue NW
Suite 1017
Washington, D.C. 20005

National Society for Crippled
Children and Adults, Inc.
2023 West Odgen Avenue
Chicago, Illinois 60612

National Society to Prevent Blindness
79 Madison Avenue
New York, New York 10016

Parents Anonymous
24-hour toll free hotline
1-800-421-0353

Planned Parenthood Federation of America
810 Seventh Street
New York, New York 10019

Prader-Willi Syndrome Association
5515 Maliku Drive
Edina, Minnesota 55436

Society for Nutrition Education
1736 Franklin Street
Oakland, California 94612

Spina Bifida Association of
America
104 Festone Avenue
New Castle, Delaware 19720
343 South Dearborn
Room 319
Chicago, Illinois 60604

The National Foundation
(Polio and Birth Defects)
P. O. Box 2000
1275 Mamaroneck Avenue
White Plains, New York 10602
914/428-7100

Toughlove
Community Services Foundation
Box 70
Sellersville, Pennsylvania 18960
2208 Brookhill Drive
Austin, Texas 78745
512/442-1198

United Cerebral Palsy of Iowa
5741 University
Des Moines, Iowa 50311
515/274-4185

United Cerebral Palsy Association, Inc.
66 East 34th Street
New York, New York 10016

United Ostomy Association
1111 Wilshire Boulevard
Los Angeles, California 90017

U.S. Department of
Health and Human Services
Office of Health Promotion
and Physical Fitness and Sports Medicine
Hubert H. Humphrey Building
200 Independent Avenue SW
Washington, D.C. 20201

U.S. Public Health Service
Division of Accident Prevention
800 North Quincy Street
Arlington, Virginia 22203

FILMS AND SLIDES

Epilepsy

Grand Mal
Building Your Own Cities, Build Your Own Wall
Epilepsy First Aid for Seizures
For Those Who Help
The Comprehensive Clinical Management of the Epilepsies
(Order from local Epilepsy Association)

Sex Education

Sexuality and the Mentally Handicapped
James Stanfield Film Associates
P. O. Box 1983
Santa Monica, CA 90406

The ABC of Sex Education for Trainables
The How and What of Sex Education for Educatables
Hallmark Films & Recordings, Inc.
51-53 New Plant Court
Owings Mills, MD 21117

All Women Have Periods
Perennial Education
477 Roger Williams
P. O. Box 855 Ravinia
Highland Park, IL 60035

(For further information, contact: Planned Parenthood of Mid Iowa)
P.O. Box 4557
Des Moines, IA 50306 or
Local Area Office

Transportation

Transporting the Handicapped
(Available for loan through DPI)

(For other audio-visual listings, contact: The Human Service Training Network Board, c/o The Clearinghouse, University Affiliated Facility, University Hospital School, Iowa City, IA 52242)

ASSESSMENT AND SCREENING

Developmental Milestones: A
Handy Pocket Reference
(Welty & Vavich)
Department of Pediatrics
Arizona Health Sciences Center
(August, 1978)

F.A.T.
The Family Assessment Tool
for School Nurses
F.A.T. Kit
P. O. Box 2161
Littleton, Colorado 80122

Good-Lite Company
7426 Madison Street
Forest Park, Illinois 60130

Parsons Visual Acuity Test for
the Difficult to Test
Bernell Corporation
422 East Monroe Street
South Bend, Indiana 46601

EDUCATIONAL MATERIALS CATALOGS

Abbott Laboratories
Professional Relations Department
Department 383RP
North Chicago, Illinois 60064

American Guidance Service
Publishers' Building
Circle Pines, Minnesota 55014

CRM/McGraw-Hill Films
Del Mar, California 92014

Johnson and Johnson
Patient Care Division
Educational Services Pamphlets
New Brunswick, New Jersey 08903

Ross Laboraties
Columbus, Ohio 43216

Sister Kenny Institute
Abbott-Northwestern Hospital
Educational Materials Catalog
2727 Chicago Avenue
Minneapolis, Minnesota 55407

OTHER RESOURCES

State of Iowa Medical Library
East 12th and Grand
Des Moines, IA 50322
1-800-362-2384

ERIC Search
Contact Local AEA Media, DPI, or
ERIC/ECE Publications Office
College of Education
University & Illinois
805 West Pennsylvania Avenue
Urbana, IL 61801

Iowa Developmental Disabilities
Audio Visual Listings Catalog
Iowa Developmental Disabilities
Media Distribution Service
Division of Developmental Disabilities
The University of Iowa
Iowa City, IA 52242

INFORMS
(Iowa Network for Obtaining Resource
Materials for Schools)
Provides abstracts of ERIC documents,
journal articles from educational
magazines, pamphlets, bibliographies,
and reference to educational materials;
and names of resource people.
To initiate a search request, contact
local INFORMS field representives.

INFORMS FIELD REPRESENTATIVES

Mike Hayford
Keystone AEA 1
Media Center
Route 2, Box 19
Elkader, IA 52043
319/245-1480

Dianne Woodward
Northern Trails AEA 2
Media Center
P. O. Box M
Clear Lake, IA 50428
515/357-6125

Jacqueline Campney
Lakeland AEA 3
Hwy. 18 & 2nd
P. O. Box 38
Cylinder, IA 50528
712/424-3424

Rebecca Noteboom
Area Education Agency 4
102 South Main Avenue
Sioux Center, IA 51250
712/722-4376

Dean McGrew
Arrowhead AEA 5
Learning Resource Center
P. O. Box 1399
Fort Dodge, IA 50501
515/576-4113

Mary Travillian
Area Education Agency 6
210 South 12th Avenue
Marshalltown, IA 50158
515/752-1578

Wanda Farrell
Area Education Agency 7
3706 Cedar Heights Drive
Cedar Falls, IA 50613
319/277-8671

Lois Harker, Ceil Ross
& John Haack
Mississippi Bend AEA 9
2604 West Locust Street
Davenport, IA 52804
319/391-0400

Margaret White
Grant Wood AEA 10
4401 Sixth Street S.W.
Cedar Rapids, IA 52404
319/399-6735

Susan Schrader
Regional Media Center
Heartland AEA 11
1932 S. W. Third
Ankeny, IA 50021
515/964-2550

Barbara Jones
Western Hills AEA 12
1520 Morningside Avenue
Sioux City, IA 51106
712/274-6074

Ron Enger, Pearl Tiarks
Loess Hills AEA 13
Halverson Center for Education
Box 1109
Council Bluffs, IA 51502
712/366-0503

Jean Chapman
Green Valley AEA 14
Green Valley Road
Creston, IA 50801
515/782-8443

Garnet Brandt
Southern Prairie AEA 15
Route 5. Box 55
Ottumwa, IA 52501
515/682-8591

Linda Fischer
Great River AEA 16
1200 University
Burlington, IA 52601
319/753-6561

REFERENCES

American Academy of Pediatrics (1981). School health: A guide for health professionals. Evanston, Illinois: The Academy.

American Dental Association and Academy of Dentistry for the Handicapped. Caring for your handicapped child's dental health.

American Red Cross (1973). Standard first aid and personal safety. Garden City, New York: Doubleday and Company, Inc.

American School Health Association (1974). Guidelines for school health services. Kent, Ohio: The Association.

An introduction to hydrocephalus. Goleta. California: American Heyer-Schulte Corporation.

Anderson, C. L. (1973). Community health. St. Louis: C. V. Mosby Company.

Anderson, R.D., Bale, J.F., Blackman, J.A., & Murphy, J.R. (1986). Infections in children: a sourcebook for educators and child care providers. Rockville, MD: Aspen Publishers, Inc., Royal Tunbridge Wells.

Avey, Melodye (April, 1973). "Primary Care for Handicapped Children." American Journal of Nursing, 73:14:658-661.

Balfour, Henry H. and Heurssner, Ralph (1984). Herpes diseases and your health. Minneapolis: University of Minnesota Press.

Barness, L. A. Manual of pediatric physical diagnosis (5th ed.). Tampa, Florida: University of South Florida College of Medicine.

Bates, B. A. (1983). A guide to physical examination (2nd ed.). Philadelphia: J. B. Lippincott Company.

Batshaw, M. L. & Perret, Y. M. (1981). Children with handicaps: A medical primer. Baltimore: Paul H. Brookes.

Benenson, A. S. (1984). Control of communicable diseases in man. Washington, D.C.: American Public Health Association, Department of A4.

Bentovim, Arnon (September 9, 1972). "Handicapped Pre-School Children and Their Families--Effects on Child's Early Emotional Development." Br. Med. J. 3:634-7.

Berger, K. & Fields, W. (1980). A pocket guide to health assessment. Virginia: Reston Publishing Company, Inc.

Bithoney, W. & Rathbun, J. (1983). Failure to thrive. In M. Levine, et al., (eds.), Developmental - behavioral pediatrics. Philadelphia: W. B. Saunders Company.

Blackman, J. (1984). Medical aspects of developmental disabilities in children birth to three (revised 1st ed.). Gaithersburg, MD: Aspen Systems Corp. (Cost is $18.95: Write to Aspen Systems Corp., P.O. Box 6018, Gaithersburg, MD 20877).

Blackman, J. & Healy, A. (1983). The early needs of children with cerebral palsy. The University of Iowa (No charge: Write to Media Services, University Hospital School).

Blackman, J., Hein, H., & Healy, A. Screening children at risk: The Iowa experience. Division of Developmental Disabilities, University Hospital School, Iowa City, Iowa, 52242 (limited copies available).

Buscaglia, Leo, Ph.D. (1983). The disabled and their parents: A counseling challenge. New York: Holt, Rinehart and Winston.

Caring for the disabled child's dental health, (1982). American Dental Association (Write to Bureau of Health Education and Audiovisual Services, American Dental Association, 211 E. Chicago, IL 60611).

Bleck, Eugene, M.D., & Nagel, Donald A., M.D. (1975). Physically handicapped children - A medical atlas for teachers. New York: Grune and Stratton, Inc.

Brown, M. S. & Murphy, M. A. (1975). Ambulatory pediatrics for nurses. New York: McGraw-Hill.

Chinn, P. L. (1979). Child health maintenance. St. Louis: C. V. Mosby Company.

Chow, M. P., Durand, B. A., Feldman, M. N. & Mills, M. A. Handbook of pediatric primary care. New York: Wiley Medical Publications.

Cramer Products, Inc. The first aider. Gardner, Kansas: Cramer Products, Inc. (Monthly publication free upon request).

Creighton, H. (1975). Laws every nurse should know. (3rd Edition). W.B. Saunders Company.

Ellerstein, Child abuse and neglect.

Epilepsy Foundation of America--State Chapters. Many Pamphlets on Epilepsy.

Erickson, M. L. (1976). Assessment and management of developmental changes in children. St. Louis: C. V. Mosby Company.

Dulac O., Aicardi, J., Rey, E., & Olive, G. (1978). "Blood levels of diazepam after single rectal administration in infants and children." J. Pediatrics, 93,1039.

Finnie, N. R. (1985). Handling the young cerebral palsied child at home (3rd ed.). New York: E. P. Dutton & Company, Inc.

Fischer, H.L., Krajicek, M.J. & Borthick, W.A. (1980). Sex education for the developmentally disabled: A guide for parents, teachers, and professionals. Baltimore: University Park Press.

Foreser, B. & Hensinger, R. N. (1983). Managing physical handicaps. Baltimore: Paul H. Brookes Publishing Company.

Franzoni E., Carboni, C., & Lambertini, A. (1983). "Rectal Diazepam: A Clinical and EEG Study After the Single Dose in Children," Epilepsia, 24:35-41.

Freidlander, B.Z., Ph.D., Starrett, G.M., Ph.D., & Kirk, G.E., Ph.D. (1975). Exceptional infant 3: Assessment and intervention. New York: Brunner/Mazel, Inc.

Friedman, Marilyn M. (1981). Family nursing. New York: Appleton-Century-Croft Press.

Gadow, K. D. (1979). Children on medication: A primer for school personnel. Reston: The Council for Exceptional Children.

Geis, H. Jon. (February, 1972). "The Problem of Personal Work in the Physically Disabled Patient." Rehab. Lit.. Vol. 33, No. 2.

Gordon, S. Sexual rights for the people who happen to be handicapped. New York: Human Policy Press, Box 127, University Station, Syracuse.

Halsam, R. H. A. & Valletutti, P. J. (Eds.) (1975). Medical problems in the classroom: The teacher's role in diagnosis and management. Baltimore: University Park Press.

Healy, A. (1983). The needs of children with disabilities. The University of Iowa (No charge: Write to Media Services, University Hospital School).

Helmet, M.D., & Mackert, M.E. (1978). Dynamics of law in nursing and health care. Prentice Hall Company.

Holvey, D. N. (1977). The Merck manual (13th ed.). West Point, Pennsylvania: Merck, Sharp & Dohme Research Laboratories.

Hoole, A. J., Greenberg, R. & Pickard, G. (1980). Patient care guidelines for family nurse practitioners. Boston: Little Brown & Company.

Howell, Sarah (February, 1973). "Psychiatric Aspects of Habilitation." Pediatric clinics of North America. 20:203-219.

Hymovich, Debra P. & Barnard, Martha Underwood Barnard (1973). Family health care. 2nd Edition, New York: McGraw-Hill.

Illingworth,, R. S. (1983). Common symptoms of disease in children (8th ed.). Boston: Blackwell Scientific Publications.

Iowa directory of services for persons with developmental disabilities Iowa City, IA: Division of Developmental Disabilities.

Infant and child nutrition: Concerns regarding the developmentally disabled (May 1981). Journal of the american dietetic association, Vol. 78, 443-452.

Iowa School Nurse Training Project (1975). Serving pupils with special health needs.

Johnson, Suzanne Hall (1979). High risk parenting: Nursing assessment and strategies for the family at risk. New York: J.B. Lippincott Company.

Johnston, R. B. & McGrab, P. R. (1976). Developmental disorders assessment, treatment, education. Baltimore: University Park Press.

Joint Study Committee of the American School Health Association and the National Society for the Prevention of Blindness, Inc. (1972). Teaching about vision (2nd ed.). New York: National Society for the Prevention of Blindness.

Kansas Department of Health & Environment, Bureau of Maternal & Child Health Vision screening guidelines.

Kanta J., Iisalo, E., Kangas, L., & Valovirta, E. (1980). "A comparative study on the clinical effects of rectal diazepam and pentobarbital on small children. Relationship between plasma level and effect," Int. J. Clini. Pharmaco. Ther. and Tox, 18,348.

Katz, Harvy P. (1982). Telephone manual of pediatric care. John Wiley & Sons, New York.

Kearsley, Richard B. & Sigel, Irving E. (1979). Infants at risk: Assessment of cognitive functioning. New York: John Wiley and Sons Halsted Press.

Kempton, Bass, & Gordon Love, sex, and birth control for the mentally retarded: A guide for parents. Philadelphia. PA 19102: Planned Parenthood Association of Southwestern Pennsylvania, 1402 Spruce Street.

Kim, M.J., McFarland, G.K., & McLane, A.M. (1984). Pocket guide to nursing diagnoses. St. Louis: The C.U. Mosby Company.

Klaus, B. (1979). Protocols handbook for nurse practitioners. New York: Wiley Medical Publication.

Knudsen, F.U. (1979). "Rectal Administration of Diazepam in Solution in the Acute Treatment of Convulsions in Infants and Children," Arch. Dis. Childhood, 54.855.

Krajicek, Marilyn J. & Tearney, Alice (1979). Detection of developmental problems in children. Baltimore: University Park Press.

Leitman, Gartnor & Henkind Manual for eye examination and diagnosis. 2nd Edition.

Levine, Brooks & Shonkeff, Pediatric approach to learning disorders.

Loma Linda University, booklets on various medical conditions, i.e. cystic fibrosis (#11), epilepsy (#5), Pheylketonuria (#2).

MacKeith, Ronald (August, 1973). "The Feelings and Behavior of Parents of Handicapped Children." Developmental medicine and child neurology. Vol. 15, No. 4.

Martin, N., Holt, N., & Hicks, D. (1981). Comprehensive rehabilitation nursing. New York: McGraw-Hill Book Company, Inc.

Mattsson, Ake (November, 1972). "Long-Term Physical Illness in Childhood: A Challenge to Psychosocial Adaptation." Pediatrics. 50:801.

McDermott, John & Akina, Eleanore (March, 1972). "Understanding and Improving the Personality Development of Children with Physical Handicaps." Clinical Pediatrics. Vol. 11, No. 3.

Medical Services Company of Arizona (1977). Quick-reference laboratory manual. Phoenix, Arixona, P.O. Box 26146.

Mercer, R. T. (1979). Perspectives on adolescent health care. Philadelphia: J. B. Lippincott Company.

Miller, B. F. & Keane, C. B. Enyclopedia and dictionary of medicine, nursing, and allied health (2nd ed.). Philadelphia: W. B. Saunders Company.

Nelson's textbook of pediatrics (1979). Philadelphia: W. B. Saunders Company.

Newton, J. (1984). School health handbook. Englewood Cliffs, NJ: Prentice Hall.

Noland, Robert (1971). Counseling parents of the ill and the handicapped. Springfield: Charles C. Thomas.

Ohio Resource Center for Low Incidence & Severely Handicapped. Visually impaired students in the regular classroom: A resource book.

Page, John (March, 1972). "A Diagnostic Multi-Disciplinary Approach to Handicapped Children." Pennsylvania Medicine. 75:89-90.

Palmer, S. & Eckrall, S. (1978). Pediatric nutrition in developmental disorders. Springfield, IL: Charles C. Thomas.

Perske, Robert, Clifton, Andrew, McClean, Barbara & Stein, Jean (Eds.) (1977). Mealtimes for severely and profoundly handicapped persons. Baltimore: University Park Press.

Perske, Robert (1973). New directions. New York: Abingdon Press.

Peterson, R. M. & Cleveland, J. O. (1975). Medical problems in the classroom: An educator's guide. Springfield: Charles C. Thomas.

Pless, Ivan, & Roghmann, Klaus (September, 1971). "Chronic Illness and Its Consequences." Journal of Pediatrics. 79:351-9.

Pipes, P. (1977). Nutrition in infancy and childhood. St. Louis: C. V. Mosby Company.

Procci, L., Magary, J. F., & Tucker, A. S. (March 1981). Meeting the challenge of P.L. 94-142 through a continuing education program for the school nurse, Journal of School Health, pp. 154-156.

Radcliffe, Donald (Ed.) (1979). Developmental disabilities in the preschool child. Johnson & Johnson.

Report of the committee on infectious diseases. Evanston, IL: American Academy of Pediatrics.

Rhodes, A.M. & Miller, R. (1984). Nursing and the law. 4th Edition. Aspen Publishers.

Robert Wood Johnson Foundation (1979). Special report--New approaches to child care services: Focus attention on the nation's schools. Princeton, NJ: Robert Wood Johnson Foundation.

Rockwell. Harlow My dentist. New York: Greenwillow Books, William Morrow and Company, Inc.

Rockwell. Harlow My doctor. New York: Macmillan Publishing Company, Inc.

Schmitt, B. D. (1980). Pediatric telephone advice: Guidelines for the health care provider on telephone triage and office management of common childhood symptoms. Boston: Little, Brown and Company.

School nurse handbook for the school health program (1983). Austin, TX: Texas Education Agency.

Schnetter, Vicki A. (1986). School Nurse Manual, Des Moines, IA: Iowa Department of Education.

Sherman, J. L. & Fields, S. K. Guide to patient evaluation: History taking, physical examination and the problem-oriented method (3rd ed.). Garden City, NY: Medical Examination Publishing Company, Inc.

Slattery, J. S., Pearson, G. A. & Toree, C. T. (1979). Maternal and child nutrition: Assessment and counseling. New York: Appleton, Century, Crofts.

Slavin, Marsha (Ed.) (March 27, 1972). "Children Develop Ways of Adjusting to Their Disabilities." JAMA. 219:1699.

Smith, Recognizable patterns of human malformation. 3rd Edition.

Smith, M. & others (1982). Feeding management of child with a handicap: A guide for professionals. Memphis: University of Tennessee Center for the Health Sciences.

Spock, Benjamin (1965). Caring for your disabled child. Greenwich Fawcett Crest Book.

Stewart, Mark A. & Gath, Ann (1978). Psychological disorders of children. Baltimore: Williams & Wilkins.

Texas Department of Health (1980). Basic vision screening manual. Austin, TX: Texas State Department of Health.

Texas Education Agency (1981). Framework for health education, k through 12 (Bulletin TEA CU1 832 21). Austin: The Agency.

Texas Education Agency (1982). A guide to better inservice education in Texas (Bulletin GE3 311 01). Austin: The Agency.

Thompson, June M., R.N., M.S., et. al (1986). Clinical nursing. St. Louis: C.V. Mosby Company.

U.S. Department of Justice Drugs of abuse. Chicago, IL: U.S. Department of Justice, Drug Enforcement Administration, n.d.

Van Allen, M.W. (1976). Pictorial manual of neurologic tests. Chicago: Year Book Medical Publishers, Inc.

Weiner, H. L., Bresnan, M. J., & Levitt, L. P. (1978). Pediatric neurology for the house officer. Baltimore. MD: The Williams & Wilkins Company.

Weller, S.D.V. (December 8, 1972). "The Abnormal Child and His Parents." Nursing mirror. 135:26-29.

Wikler, Wasow, M. & Hatfield, E. (1981). "Chronic Sorrow Revisited: Parent vs. Professional Depiction of the Adjustment of Parents and Mentally Retarded Children." American journal of orthopsychiatry, Vol. 51, No. 1., pp. 63-70.

Witkin, Kate (1977). To move, To learn. Philadelphia. PA: Temple University Press.

Wolraich, M. (1983). The needs of children with spina bifida. The University of Iowa (No charge: Write to Media Services, University Hospital School).

Wojnanousky, Ty & Shahrad, Illustrated encyclopedia of dermatology.

Wold, S. J. (1981). School nursing: a framework for practice. St. Louis: C. V. Mosby Company.

Wolraich, M. L. & Henderson, M. (1985). What you should know about your child with spina bifida. An Iowa University Affiliated Program Publication.

Wright, Pauline (1983). Caring for the child with disabilities. University of Iowa Hospital School.